

G.2 Water Quality Impact Results

Potential impacts on groundwater are provided in the following sections as peak concentrations of contaminants in well water and the time of occurrence. The alternatives, waste types, and disposal conditions are briefly stated to establish the framework for comparing the results.

G.2.1 Alternative Group A

LLW considered in Alternative Group A includes wastes to be disposed of in several categories:

- Pre-1970 LLW
- 1970-1987 LLW
- 1988-1995 LLW
- 1996-2007 Cat 1 and Cat 3 LLW
- Cat 1 and Cat 3 LLW and MLLW disposed of after 2007 in deeper (18 m) (59 ft) and wider trenches in existing LLBGs 218-E-12B and 218-W-5
- Melters disposed of after 2007 in 21-m (69-ft) deep trenches in LLBG 218-E-12B
- ILAW disposed of after 2007 in a disposal facility near the PUREX Plant.

Results for Alternative Group A are summarized in Tables G.7a, b, c; G.8, G.9, and G.10 and Figures G.18 through G.27. Results for this alternative group include:

- Predicted peak concentrations of key radionuclides from an LLBG in groundwater at the 1-km (0.6-mi) LOAs down-gradient from the waste sites for wastes disposed of prior to 1996 (Table G.7a) and wastes disposed of after 1996 for Lower Bound, Hanford Only, and Upper Bound volumes (Table G.8)
- Predicted peak concentrations of key radionuclides from an LLBG in groundwater along the Columbia River for wastes disposed of prior to 1996 (Table G.7b) and wastes disposed of after 1996 for Lower Bound, Hanford Only, and Upper Bound volumes (Table G.9)
- Predicted peak river fluxes of key radionuclides from an LLBG to the Columbia River for wastes disposed of prior to 1996 (Table G.7c) and wastes disposed of after 1996 for Lower Bound, Hanford Only, and Upper Bound volumes (Table G.10).

Table G.7a. Predicted Peak Concentrations of Key Constituents by Waste Type and Category at a 1-km Line of Analysis, All Action Alternatives

| Constituent | Benchmark Drinking Water Standard (pCi/L) | Inventory (Ci) | Maximum Concentration (pCi/L) | Approximate Peak Arrival Time (yrs) |
|----------------------|---|----------------|-------------------------------|-------------------------------------|
| Pre-1970 LLW | | | | |
| <i>200 East Area</i> | | | | |
| C-14 | 2000 | 0.00E+00 | | |
| Tc-99 | 900 | 5.16E-01 | 1.44E+01 | 110 |
| Grouted Tc-99 | 900 | 0.00E+00 | 0.00E+00 | |
| I-129 | 1 | 1.24E-03 | 3.47E-02 | 110 |
| Grouted I-129 | 1 | 0.00E+00 | 0.00E+00 | |
| U-233 | (a) | 1.03E+01 | 3.20E-01 | 10000 |
| U-234 | (a) | 3.68E-01 | 1.14E-02 | 10000 |
| U-235 | (a) | 1.12E-02 | 3.48E-04 | 10000 |
| U-236 | (a) | 7.53E-03 | 2.34E-04 | 10000 |
| U-238 | (a) | 2.69E-01 | 8.35E-03 | 10000 |
| <i>200 West Area</i> | (a) | | | |
| C-14 | 2000 | 0.00E+00 | 0.00E+00 | |
| Tc-99 | 900 | 1.30E-01 | 2.71E+00 | 190 |
| Grouted Tc-99 | 900 | 0.00E+00 | 0.00E+00 | |
| I-129 | 1 | 1.70E-04 | 3.54E-03 | 190 |
| Grouted I-129 | 1 | 0.00E+00 | 0.00E+00 | |
| U-233 | (a) | 0.00E+00 | 0.00E+00 | |
| U-234 | (a) | 1.45E+00 | 0.00E+00 | 10,000 |
| U-235 | (a) | 4.38E-02 | 0.00E+00 | 10,000 |
| U-236 | (a) | 2.95E-02 | 0.00E+00 | 10,000 |
| U-238 | (a) | 1.06E+00 | 0.00E+00 | 10,000 |
| 1970-1987 LLW | | | | |
| <i>200 East Area</i> | | | | |
| C-14 | 2000 | 2.15E+02 | 4.84E+00 | 10000 |
| Tc-99 | 900 | 0.00E+00 | | |
| Grouted Tc-99 | 900 | 0.00E+00 | | |
| I-129 | 1 | 1.87E-02 | 5.23E-01 | 110 |
| Grouted I-129 | 1 | 0.00E+00 | | |
| U-233 | (a) | 0.00E+00 | | |
| U-234 | (a) | 3.08E-02 | 1.89E-03 | 10000 |
| U-235 | (a) | 2.61E-03 | 1.60E-04 | 10000 |
| U-236 | (a) | 0.00E+00 | 0.00E+00 | 10000 |
| U-238 | (a) | 6.28E-02 | 3.85E-03 | 10000 |
| <i>200 West Area</i> | | | | |
| C-14 | 2000 | 3.92E+02 | 0.00E+00 | >10,000 |
| Tc-99 | 900 | 0.00E+00 | | |
| Grouted Tc-99 | 900 | 0.00E+00 | | |
| I-129 | 1 | 1.77E-03 | 3.94E-02 | 250 |
| Grouted I-129 | 1 | 0.00E+00 | | |
| U-233 | (a) | 0.00E+00 | | |
| U-234 | (a) | 3.94E+01 | 0.00E+00 | >10,000 |
| U-235 | (a) | 3.33E+00 | 0.00E+00 | >10,000 |
| U-236 | (a) | 0.00E+00 | 0.00E+00 | >10,000 |
| U-238 | (a) | 2.82E+01 | 0.00E+00 | >10,000 |

Table G.7a. (contd)

| Constituent | Benchmark Drinking Water Standard (pCi/L) | Inventory (Ci) | Maximum Concentration (pCi/L) | Approximate Peak Arrival Time (yrs) |
|---|---|----------------|-------------------------------|-------------------------------------|
| 1988-1995 LLW | | | | |
| 200 East Area | | | | |
| C-14 | 2000 | 5.11E+00 | 1.15E-01 | 10000 |
| Tc-99 | 900 | 1.39E-01 | 3.89E+00 | 110 |
| Grouted Tc-99 | 900 | 0.00E+00 | | |
| I-129 | 1 | 9.45E-05 | 2.64E-03 | 110 |
| Grouted I-129 | 1 | 0.00E+00 | | |
| U-233 | (a) | 2.09E-05 | 1.28E-06 | 10000 |
| U-234 | (a) | 1.85E-03 | 1.13E-04 | 10000 |
| U-235 | (a) | 4.29E-04 | 2.63E-05 | 10000 |
| U-236 | (a) | 1.85E-06 | 1.13E-07 | 10000 |
| U-238 | (a) | 1.93E-02 | 1.18E-03 | 10000 |
| 200 West Area | | | | |
| C-14 | 2000 | 9.29E+00 | 0.00E+00 | >10,000 |
| Tc-99 | 900 | 4.71E-01 | 1.18E+01 | 210 |
| Grouted Tc-99 | 900 | 0.00E+00 | | |
| I-129 | 1 | 3.06E-02 | 7.70E-01 | 210 |
| Grouted I-129 | 1 | 0.00E+00 | | |
| U-233 | (a) | 6.54E-02 | 0.00E+00 | >10,000 |
| U-234 | (a) | 5.77E+00 | 0.00E+00 | >10,000 |
| U-235 | (a) | 1.34E+00 | 0.00E+00 | >10,000 |
| U-236 | (a) | 5.77E-03 | 0.00E+00 | >10,000 |
| U-238 | (a) | 6.03E+01 | 0.00E+00 | >10,000 |
| (a) The benchmark groundwater standard for uranium is 30 µg/L expressed as total uranium. To convert isotope specific concentrations from pCi/L to µg/L, use following conversion factors: | | | | |
| <ul style="list-style-type: none"> • Uranium-233 - 1.05E-04 • Uranium-234 - 1.62E-04 • Uranium-235 - 4.66E-01 • Uranium-236 - 1.58E-02 • Uranium-238 - 3.00E+00. | | | | |

Respective results presented for previously disposed of wastes before 1996 for Alternative Group A are only presented once in Tables G.7a, G.7b, and G.7c since these results are the same for all action alternative groups (that is, Alternative Groups A, B, C, D₁, D₂, D₃, E₁, E₂, and E₃).

G.2.1.1 Previously Disposed of Wastes

Constituents released from previously disposed of wastes that have the highest impact on water quality are technetium-99 and iodine-129. Estimated combined technetium-99 and iodine-129 levels at the 200 East Area NW LOA peaked at about 110 years and about 220 years at the 200 West Area LOA. Combined concentration levels of technetium-99 were relatively low (less than 20 pCi/L) down-gradient from both areas and were a small percentage of the benchmark maximum contaminant level (MCL) for technetium-99 (900 pCi/L). The combined concentration level of iodine-129 at the 200 East Area NW LOA was about 60 percent (0.6 pCi/L) of the benchmark MCL. This concentration level resulted from releases of the iodine-129 inventory in 1970-87 LLW. The combined concentration level of iodine-129 at

Table G.7b. Predicted Peak Concentrations of Key Constituents by Waste Type and Category at a Line of Analysis Along the Columbia River, All Action Alternatives

| Constituent | Benchmark Drinking Water Standard (pCi/L) | Inventory (Ci) | Maximum Concentration (pCi/L) | Approximate Peak Arrival Time (yrs) |
|----------------------|---|----------------|-------------------------------|-------------------------------------|
| Pre-1970 LLW | | | | |
| <i>200 East Area</i> | | | | |
| C-14 | 2000 | 0.00E+00 | | |
| Tc-99 | 900 | 5.16E-01 | 1.29E+00 | 260 |
| Grouted Tc-99 | 900 | 0.00E+00 | 0.00E+00 | |
| I-129 | 1 | 1.24E-03 | 3.09E-03 | 260 |
| Grouted I-129 | 1 | 0.00E+00 | 0.00E+00 | |
| U-233 | (a) | 1.03E+01 | 1.92E-02 | 10000 |
| U-234 | (a) | 3.68E-01 | 6.87E-04 | 10000 |
| U-235 | (a) | 1.12E-02 | 2.09E-05 | 10000 |
| U-236 | (a) | 7.53E-03 | 1.41E-05 | 10000 |
| U-238 | (a) | 2.69E-01 | 5.02E-04 | 10000 |
| <i>200 West Area</i> | (a) | | | |
| C-14 | 2000 | 0.00E+00 | 0.00E+00 | |
| Tc-99 | 900 | 1.30E-01 | 1.69E-01 | 530 |
| Grouted Tc-99 | 900 | 0.00E+00 | 0.00E+00 | |
| I-129 | 1 | 1.70E-04 | 2.21E-04 | 530 |
| Grouted I-129 | 1 | 0.00E+00 | 0.00E+00 | |
| U-233 | (a) | 0.00E+00 | 0.00E+00 | |
| U-234 | (a) | 1.45E+00 | 0.00E+00 | 10,000 |
| U-235 | (a) | 4.38E-02 | 0.00E+00 | 10,000 |
| U-236 | (a) | 2.95E-02 | 0.00E+00 | 10,000 |
| U-238 | (a) | 1.06E+00 | 0.00E+00 | 10,000 |
| 1970-1987 LLW | | | | |
| <i>200 East Area</i> | | | | |
| C-14 | 2000 | 2.15E+02 | 2.65E-01 | 10000 |
| Tc-99 | 900 | 0.00E+00 | 0.00E+00 | 0 |
| Grouted Tc-99 | 900 | 0.00E+00 | 0.00E+00 | 0 |
| I-129 | 1 | 1.87E-02 | 4.66E-02 | 260 |
| Grouted I-129 | 1 | 0.00E+00 | 0.00E+00 | 0 |
| U-233 | (a) | 0.00E+00 | 0.00E+00 | 0 |
| U-234 | (a) | 3.08E-02 | 1.12E-04 | 10000 |
| U-235 | (a) | 2.61E-03 | 9.48E-06 | 10000 |
| U-236 | (a) | 0.00E+00 | 0.00E+00 | 10000 |
| U-238 | (a) | 6.28E-02 | 2.28E-04 | 10000 |
| <i>200 West Area</i> | | | | |
| C-14 | 2000 | 3.92E+02 | 0.00E+00 | 10,000 |
| Tc-99 | 900 | 0.00E+00 | 0.00E+00 | |
| Grouted Tc-99 | 900 | 0.00E+00 | 0.00E+00 | |
| I-129 | 1 | 1.77E-03 | 2.01E-03 | 610 |
| Grouted I-129 | 1 | 0.00E+00 | 0.00E+00 | |
| U-233 | (a) | 0.00E+00 | 0.00E+00 | |
| U-234 | (a) | 3.94E+01 | 0.00E+00 | 10,000 |
| U-235 | (a) | 3.33E+00 | 0.00E+00 | 10,000 |
| U-236 | (a) | 0.00E+00 | 0.00E+00 | 10,000 |
| U-238 | (a) | 2.82E+01 | 0.00E+00 | 10,000 |

Table G.7b. (contd)

| Constituent | Benchmark Drinking Water Standard (pCi/L) | Inventory (Ci) | Maximum Concentration (pCi/L) | Approximate Peak Arrival Time (yrs) |
|---|---|----------------|-------------------------------|-------------------------------------|
| 1988-1995 LLW | | | | |
| 200 East Area | | | | |
| C-14 | 2000 | 5.11E+00 | 9.11E-04 | 10000 |
| Tc-99 | 900 | 1.39E-01 | 3.46E-01 | 260 |
| Grouted Tc-99 | 900 | 0.00E+00 | 0.00E+00 | |
| I-129 | 1 | 9.45E-05 | 2.35E-04 | 260 |
| Grouted I-129 | 1 | 0.00E+00 | 0.00E+00 | |
| U-233 | (a) | 2.09E-05 | 7.59E-08 | 10000 |
| U-234 | (a) | 1.85E-03 | 6.72E-06 | 10000 |
| U-235 | (a) | 4.29E-04 | 1.56E-06 | 10000 |
| U-236 | (a) | 1.85E-06 | 6.72E-09 | 10000 |
| U-238 | (a) | 1.93E-02 | 7.01E-05 | 10000 |
| 200 West Area | | | | |
| C-14 | 2000 | 9.29E+00 | 0.00E+00 | 10,000 |
| Tc-99 | 900 | 4.71E-01 | 3.45E-02 | 600 |
| Grouted Tc-99 | 900 | 0.00E+00 | 0.00E+00 | |
| I-129 | 1 | 3.06E-02 | 3.45E-02 | 600 |
| Grouted I-129 | 1 | 0.00E+00 | | |
| U-233 | (a) | 6.54E-02 | 0.00E+00 | 10,000 |
| U-234 | (a) | 5.77E+00 | 0.00E+00 | 10,000 |
| U-235 | (a) | 1.34E+00 | 0.00E+00 | 10,000 |
| U-236 | (a) | 5.77E-03 | 0.00E+00 | 10,000 |
| U-238 | (a) | 6.03E+01 | 0.00E+00 | 10,000 |
| (a) The benchmark groundwater standard for uranium is 30 µg/L expressed as total uranium. To convert isotope specific concentrations from pCi/L to µg/L, use following conversion factors: | | | | |
| <ul style="list-style-type: none"> • Uranium-233 - 1.05E-04 • Uranium-234 - 1.62E-04 • Uranium-235 - 4.66E-01 • Uranium-236 - 1.58E-02 • Uranium-238 - 3.00E+00. | | | | |

the 200 West Area LOA was about 50 percent (0.5 pCi/L) of benchmark MCL. This concentration level also resulted from releases of the iodine-129 inventory in 1970-87 LLW.

Technetium-99 and iodine-129 combined concentrations were well below benchmark MCLs by the time they reached the Columbia River. Overall concentration levels at the Columbia River LOA reached their peaks in about 260 years. Contaminant levels from sources in the 200 West Area reached their peaks along the river LOA between 500 and 600 years.

The combined concentration of carbon-14 and the uranium isotopes were found to peak at about or beyond 10,000 years. Carbon-14 concentrations at all 1-km LOAs were well below the drinking water standard (DWS) of 2000 pCi/L. Combined concentration levels of uranium-238, the dominant uranium isotope, were also well below the benchmark MCLs at the 200 East and West Area LOAs at 10,000 years.

Table G.7c. Predicted Peak River Flux of Key Constituents by Waste Type and Category at a Line of Analysis to the Columbia River, All Action Alternatives

| Constituent | Inventory (Ci) | Maximum River Flux (Ci) | Approximate Peak Arrival Time (yrs) |
|----------------------|-------------------|-------------------------------|--|
| Pre-1970 LLW | | | |
| 200 East Area | | | |
| C-14 | 0.00E+00 | | |
| Tc-99 | 5.16E-01 | 9.81E-03 | 290 |
| Grouted Tc-99 | 0.00E+00 | 0.00E+00 | |
| I-129 | 1.24E-03 | 2.36E-05 | 290 |
| Grouted I-129 | 0.00E+00 | 0.00E+00 | |
| U-233 | 1.03E+01 | 1.29E-04 | 10,000 |
| U-234 | 3.68E-01 | 4.61E-06 | 10,000 |
| U-235 | 1.12E-02 | 1.40E-07 | 10,000 |
| U-236 | 7.53E-03 | 9.43E-08 | 10,000 |
| U-238 | 2.69E-01 | 3.37E-06 | 10,000 |
| 200 West Area | | | |
| C-14 | 0.00E+00 | 0.00E+00 | |
| Tc-99 | 1.30E-01 | 1.68E-03 | 600 |
| Grouted Tc-99 | 0.00E+00 | 0.00E+00 | |
| I-129 | 1.70E-04 | 2.20E-06 | 600 |
| Grouted I-129 | 0.00E+00 | 0.00E+00 | |
| U-233 | 0.00E+00 | 0.00E+00 | |
| U-234 | 1.45E+00 | 0.00E+00 | 10,000 |
| U-235 | 4.38E-02 | 0.00E+00 | 10,000 |
| U-236 | 2.95E-02 | 0.00E+00 | 10,000 |
| U-238 | 1.06E+00 | 0.00E+00 | 10,000 |
| 1970-1987 LLW | | | |
| 200 East Area | | | |
| C-14 | 2.15E+02 | 1.76E-03 | 10000 |
| Tc-99 | 0.00E+00 | 0.00E+00 | 0 |
| Grouted Tc-99 | 0.00E+00 | 0.00E+00 | 0 |
| I-129 | 1.87E-02 | 3.54E-04 | 290 |
| Grouted I-129 | 0.00E+00 | 0.00E+00 | 0 |
| U-233 | 0.00E+00 | 0.00E+00 | 0 |
| U-234 | 3.08E-02 | 7.50E-07 | 10,000 |
| U-235 | 2.61E-03 | 6.35E-08 | 10,000 |
| U-236 | 0.00E+00 | 0.00E+00 | 10,000 |
| U-238 | 6.28E-02 | 1.53E-06 | 10,000 |
| 200 West Area | | | 0 |
| C-14 | 3.92E+02 | 0.00E+00 | 10,000 |
| Tc-99 | 0.00E+00 | 0.00E+00 | |
| Grouted Tc-99 | 0.00E+00 | 0.00E+00 | |
| I-129 | 1.77E-03 | 2.07E-05 | 690 |
| Grouted I-129 | 0.00E+00 | 0.00E+00 | |
| U-233 | 0.00E+00 | 0.00E+00 | |
| U-234 | 3.94E+01 | 0.00E+00 | 10,000 |
| U-235 | 3.33E+00 | 0.00E+00 | 10,000 |
| U-236 | 0.00E+00 | 0.00E+00 | 10,000 |
| U-238 | 2.82E+01 | 0.00E+00 | 10,000 |

Table G.7c. (contd)

| Constituent | Inventory (Ci) | Maximum River Flux (Ci) | Approximate Peak Arrival Time (yrs) |
|----------------------|----------------------|-------------------------------|--|
| | 1988-1995 LLW | | |
| <i>200 East Area</i> | | | |
| C-14 | 5.11E+00 | 6.05E-06 | 10,000 |
| Tc-99 | 1.39E-01 | 2.63E-03 | 290 |
| Grouted Tc-99 | 0.00E+00 | 0.00E+00 | |
| I-129 | 9.45E-05 | 1.79E-06 | 290 |
| Grouted I-129 | 0.00E+00 | 0.00E+00 | |
| U-233 | 2.09E-05 | 5.09E-10 | 10,000 |
| U-234 | 1.85E-03 | 4.50E-08 | 10,000 |
| U-235 | 4.29E-04 | 1.04E-08 | 10,000 |
| U-236 | 1.85E-06 | 4.50E-11 | 10,000 |
| U-238 | 1.93E-02 | 4.70E-07 | 10,000 |
| <i>200 West Area</i> | | | |
| C-14 | 9.29E+00 | 0.00E+00 | 10,000 |
| Tc-99 | 4.71E-01 | 0.00E+00 | 10,000 |
| Grouted Tc-99 | 0.00E+00 | 0.00E+00 | |
| I-129 | 3.06E-02 | 3.58E-04 | 670 |
| Grouted I-129 | 0.00E+00 | | |
| U-233 | 6.54E-02 | 0.00E+00 | 10,000 |
| U-234 | 5.77E+00 | 0.00E+00 | 10,000 |
| U-235 | 1.34E+00 | 0.00E+00 | 10,000 |
| U-236 | 5.77E-03 | 0.00E+00 | 10,000 |
| U-238 | 6.03E+01 | 0.00E+00 | 10,000 |

Combined contaminant flux for technetium-99 and iodine-129 inventories in previously disposed of LLW reaching the Columbia River within the 10,000-year period of analysis were estimated as follows:

- ~95 Ci of technetium-99 (peak loading 0.1 Ci /yr around 520 -530 yrs)
- ~20 Ci of iodine-129 (peak loading 0.06 Ci/yr 260 yrs)

This amount of constituent loading does not adversely affect water quality in the Columbia River.

G.2.1.2 Wastes Disposed of After 1995

Water quality impacts from wastes disposed of after 1995 were also highest for technetium-99 and iodine-129. Technetium-99 levels at the 200 East Area NW LOA were about 8 percent (75 pCi/L) of the benchmark MCL for the Hanford Only waste volume. The source for these elevated levels is from technetium-99 released from MLLW disposed of after 2008. Technetium-99 levels at the 200 West Area LOA were about 33 percent (300 pCi/L) of the benchmark MCL. The source of these impacts was primarily from the technetium-99 releases from Cat 3 LLW disposed of after 2008. Predicted technetium-99 levels were very similar for all volumes but were slightly higher for the Upper Bound volume.

1 Iodine-129 levels at the 200 East Area NW LOA were about 80 percent of the DWS of 1 pCi/L for
2 the Hanford Only volumes. The main contributor to these concentration levels was MLLW disposed of
3 after 2008. Iodine-129 levels at the 200 West Area LOA were about 40 percent of the DWS of 1 pCi/L
4 for the Hanford Only volume. The main contributor to these concentration levels was MLLW disposed of
5 between 1996 and 2007.

7 Iodine-129 levels were slightly higher at the 200 East Area NW LOA and slightly lower at the
8 200 West Area LOA for the Upper Bound volume. This result is reflective of changes in partitioning
9 iodine-129 inventory for the MLLW (1996-2007) waste category between the 200 East and West Areas
10 for the Upper Bound volume.

12 Technetium-99 and iodine-129 concentrations were well below benchmark MCLs by the time they
13 reached the Columbia River. Overall concentration levels at the Columbia River LOA from sources in
14 the 200 East Area reached their peaks between 1550 and 1600 years. Contaminant levels from sources in
15 the 200 West Area reached their peaks the Columbia River LOA between 1600 and 2100 years.

17 Concentration levels of carbon-14 and uranium isotopes at the 1-km (0.6-m) LOAs did not reach their
18 peak values until after the 10,000-year period of analysis and were well below benchmark MCLs at
19 10,000 years.

21 Combined contaminant flux for technetium-99 and iodine-129 inventories in previously disposed of
22 LLW reaching the Columbia River within the 10,000-year period of analysis were estimated as follows:

- 24 • 116 and 121 Ci of technetium-99 for the Hanford Only and Upper Bound volumes, respectively.
25 Peak loading was about 0.04 Ci /yr about 1750 years.
- 27 • 0.2 Ci of iodine-129 for Hanford Only and Upper Bound volumes. Peak loading 0.0001 Ci/yr at
28 about 1650 years.

30 This amount of constituent loading does not adversely affect water quality in the Columbia River.

32 A qualitative analysis of these results using the alternative groundwater conceptual model described
33 in Sections G.1.3.1 and G.1.3.2 would suggest the following:

- 35 • Arrival times and estimated concentration levels at the 1-km (0.6-m) well location down-gradient for
36 LLW and MLLW disposed of in 218-E-12b would be expected to change because these source areas
37 under an easterly flow condition would be closer to an aggregate HSW disposal area boundary and
38 thus be close to the 1-km (0.6-m) well LOA. Changes would be expected to be similar to the earlier
39 rises in concentration levels and slight increases (20 to 30 percent) of concentration levels calculated
40 for unit releases from HSW disposal site areas of the 218-E-12b LLBG. For this alternative, these
41 types of changes would be expected for nearly all LLW and MLLW categories disposed of in the
42 218-12b LLBG. The most substantial impacts would be for key sources that were identified above,
43 including (1) 1970-87 LLW, (2) MLLW disposed of between 1996 and 2007, and (3) MLLW
44 disposed of after 2007.

- No significant changes would be expected for estimated concentration levels and impacts estimated from HSW disposal areas in the 218-E-10 LLBG in the 200 East Area and all disposal locations in the 200 West Area and the ERDF.

Respective results presented for previously disposed of wastes before 1996 for Alternative Group A are only presented once in Tables G.8a, b, and c since these results are the same for all action alternative groups (that is, Alternative Groups A, B, C, D₁, D₂, D₃, E₁, E₂, and E₃). In addition, because LLW and MLLW disposed of between 1996 and 2007 used conventional trenches with the same assumptions regarding source-term release and vadose zone modeling, the results calculated for Alternative Group A would also apply to all alternatives except the No Action Alternative. Thus, discussion of results for the Alternative Groups B through E will focus on results from LLW and MLLW disposed of after 2007 and not repeat results for LLW and MLLW disposed of between 1996 and 2007 unless the wastes include inventories that are the dominant in a particular HSW disposal area.

G.2.2 Alternative Group B

LLW considered in Alternative Group B includes the same waste considered in Alternative Group A but disposes of Cat 1 and Cat 3 LLW and MLLW in conventional trenches after 2007 in LLBGs 218-E-12b and 218-W-5 and the ILAW disposal facility located just south of the CWC.

Results for Alternative Group B are summarized in Tables G.11, G.12, and G.13 and Figures G.28 through G.33. Results for this alternative group include:

- Predicted peak concentrations of key radionuclides from an LLBG in groundwater at the 1-km (0.6-mi) LOA down-gradient from wastes disposed of after 1996 for Lower Bound, Hanford Only, and Upper Bound volumes (Table G.11)
- Predicted peak concentrations of key radionuclides from an LLBG in groundwater along the Columbia River for wastes disposed of after 1996 for Lower Bound, Hanford Only, and Upper Bound volumes (Table G.12)
- Predicted peak river fluxes of key radionuclides from an LLBG to the Columbia River for wastes disposed of after 1996 for Lower Bound, Hanford Only, and Upper Bound volumes (Table G.13).

G.2.2.1 Previously Disposed of Wastes

Because of assumptions in the source-term release and vadose zone modeling used for LLW and MLLW previously disposed of between 1996 and 2007 for Alternative Group B, results for this alternative were the same for those waste categories calculated for Alternative Group A. Results for previously disposed of wastes before 1996 for Alternative Group A are presented in Tables G.7a, b, and c in Section G.2.2.

G.2.2.2 Wastes Disposed of After 1995

As expected, results showed slightly higher concentration values of both technetium-99 and iodine-129 from key wastes at all LOAs. Under this alternative group, water quality was most impacted by releases of technetium-99 and iodine-129 from the disposed of LLW and MLLW. Technetium-99 levels at the 200 East Area NW LOA were about 11 and 13 percent (95 and 116 pCi/L) for the Hanford Only and Upper Bound volumes, respectively. The primary source of these elevated levels was from inventories in MLLW disposed of after 2008. These higher concentration levels are generally consistent with the broader surface area of releases associated with the use of conventional trenches under this alternative.

Technetium-99 levels at the 200 West Area LOA were estimated to be about 33 percent (300 pCi/L) of the benchmark MCL of 900 pCi/L for the Hanford Only and Upper Bound volumes at the 1-km LOA. These values are slightly less than levels estimated for Alternative Group A. This would be expected since the source of these impacts was primarily from the technetium-99 inventories in Cat 3 LLW disposed of after 2008. Additionally, the use of conventional trenches under this alternative would result in some of the inventory associated with Cat 1 and Cat 3 LLW disposed of after 2007 being emplaced in the 200 East Area.

Iodine-129 levels at the 200 East Area NW LOA were 110 and 120 percent (1.1 and 1.2 pCi/L) of the benchmark MCL of 1 pCi/L for the Hanford Only volume. The main contributor to these concentration levels was inventories in MLLW disposed of after 2008. Iodine-129 levels at the 200 West Area LOA were about 40 and 20 percent (0.4 and 0.2 pCi/L) of the benchmark MCL for the Hanford Only volume. The main contributor to these concentration levels was inventories in MLLW disposed of between 1996 and 2007.

Iodine-129 levels were slightly higher at the 200 East Area NW LOA and slightly lower at the 200 West Area LOA for the Upper Bound volume. This impact is reflective of changes in the partitioning of iodine-129 inventory for the MLLW (1996-2007) waste category between the 200 East and West Areas for the Upper Bound volume.

Concentration levels of carbon-14 and uranium isotopes at the 1-km (0.6-m) well down-gradient from source areas of projected LLW and MLLW did not reach their peak values until after the 10,000-year period of analysis. Concentration levels for both constituents were well below benchmark MCLs at 10,000 years.

Concentrations of all constituents were well below benchmark MCLs by the time they reached the Columbia River LOA. Overall concentration levels at the Columbia River LOA from sources in the 200 East Area reached their peaks at about 1400 years. Contaminant levels from sources in 200 West Area sources reached their peaks along the river at about 1500 years.

Combined contaminant flux for technetium-99 and iodine-129 inventories in wastes disposed of after 1995 reaching the Columbia River within the 10,000-year period of analysis were estimated as follows:

1 • 118 and 121 Ci of technetium-99 for the Hanford Only and Upper Bound volumes, respectively.
2 Peak loading was about 0.04 Ci /yr at about 1690 years.

3
4 • 0.2 Ci of iodine-129 for Hanford Only and Upper Bound volumes. Peak loading 0.0001 Ci/yr at
5 about 1630 years.

6
7 This amount of constituent loading does not adversely affect water quality in the Columbia River.
8

9 **G.2.3 Alternative Group C**

10
11 LLW considered in Alternative Group C includes the same wastes considered in Alternative Group A
12 but disposes of Cat 1 and Cat 3 LLW and MLLW in single, lined, expandable trenches after 2007 in
13 LLBGs 218-E-12b and 218-W-5. The melters would be placed in a lined trench and ILAW would be
14 placed in a single, expandable, lined trench near the PUREX Plant.

15
16 Results for Alternative Group C are summarized in Tables G.14, G.15, and G.16 and Figures G.34
17 through G.39. Results for this alternative group include:

- 18
19 • Predicted peak concentrations of key radionuclides from an LLBG in groundwater at the 1-km (0.6
20 mi) LOA down-gradient from wastes disposed of after 1996 for Lower Bound, Hanford Only, and
21 Upper Bound volumes (Table G.14)
22
23 • Predicted peak concentrations of key radionuclides from an LLBG in groundwater along the
24 Columbia River for wastes disposed of after 1996 for Lower Bound, Hanford Only, and MLLW
25 disposed of in conventional trenches between 1996 and 2007 for Upper Bound volumes (Table G.15)
26
27 • Predicted peak river fluxes of key radionuclides from an LLBG to the Columbia River for wastes
28 disposed of after 1996 for Lower Bound, Hanford Only, and Upper Bound volumes (Table G.16).
29

30 **G.2.3.1 Previously Disposed of Wastes**

31
32 Because of assumptions in the source-term release and vadose zone modeling used for LLW and
33 MLLW previously disposed of between 1996 and 2007 for Alternative Group C, results for this
34 alternative were the same for those waste categories calculated for Alternative Group A. Results for
35 previously disposed of wastes before 1996 for Alternative Group A are presented in Tables G.7a, b, and c
36 in Section G.2.1.

37 **G.2.3.2 Wastes Disposed of After 1995**

38
39 Because of assumptions in the source-term release and vadose zone modeling used for LLW and
40 MLLW previously disposed of between 1996 and 2007 for Alternative Group C, results for this
41 alternative group were the same for those waste categories calculated for Alternative Group A. Results
42 for LLW and MLLW disposed of after 2007 for this alternative group were essentially the same as the
43 results presented in Tables G.8 through G.10 for Alternative Group A. These results are consistent since
44

the analysis assumption about waste depth and projected land use for waste disposed of after 2007 are the same for both alternative groups.

G.2.4 Alternative Group D₁

LLW considered in Alternative Group D₁ includes the same wastes considered in Alternative Group A but disposes of Cat 1 and Cat 3 LLW and MLLW in a lined modular facility after 2007 near the PUREX Plant. The melter trench and the ILAW disposal facility would also be placed in the same general area.

Results for Alternative Group D₁ are summarized in Tables G.17, G.18, and G.19 and Figures G.40 through G.45. Results for this alternative group include:

- Predicted peak concentrations of key radionuclides from an LLBG in groundwater at the 1-km (0.6 mi) LOA down-gradient from wastes disposed of after 1996 for Lower Bound, Hanford Only, and Upper Bound volumes (Table G.17)
- Predicted peak concentrations of key radionuclides from an LLBG in groundwater along the Columbia River for wastes disposed of after 1996 for Lower Bound, Hanford Only, and Upper Bound volumes (Table G.18)
- Predicted peak river fluxes of key radionuclides from an LLBG to the Columbia River for wastes disposed of after 1996 for Lower Bound, Hanford Only, and Upper Bound volumes (Table G.19).

G.2.4.1 Previously Disposed of Wastes

Because of assumptions in the source-term release and vadose zone modeling used for LLW and MLLW previously disposed of between 1996 and 2007 for Alternative Group D, results for this alternative were the same for those waste categories calculated for Alternative Group A. Results for previously disposed of wastes before 1996 for Alternative Group A are presented in Tables G.7a, b, and c in Section G.2.1.

G.2.4.2 Wastes Disposed of After 1995

The highest impact for this alternative reflects the emplacement of all wastes disposed of after 2007 in the vicinity of the PUREX Plant. Impacts from LLW and MLLW are dominated by technetium-99 and iodine-129.

Combined concentration levels for technetium-99 were about 18 to 20 percent (167 and 185 pCi/L) of the benchmark MCL at the 200 East Area SE LOA for the Hanford Only and Upper Bound volumes. The primary source for these elevated levels was from inventories in MLLW disposed of after 2008. Two peaks reflect technetium-99 inventories in both Cat 3 LLW and MLLW disposed of after 2008 near the PUREX Plant.

1 Combined technetium-99 concentration levels at the 200 Area West LOA were about 5 and 3 percent
2 (42 and 31 pCi/L) of the benchmark MCL for the Hanford Only and Upper Bound volumes. These values
3 are slightly less than levels estimated for Alternative Group A. The source of these impacts was primarily
4 from the technetium-99 inventory in MLLW disposed of between 1996 and 2007. Decreased concentra-
5 tions for the Upper Bound volume reflect the emplacement of some of the MLLW inventory in the
6 200 East Area.

7
8 Combined iodine-129 concentration levels at the 200 East Area SE LOA were about 60 and
9 70 percent (0.6 and 0.7 pCi/L) of the benchmark MCL for the Hanford Only and Upper Bound volumes.
10 The main contributor to these concentration levels was inventories in MLLW disposed of after 2008.

11
12 Combined iodine-129 levels at the 200 West Area LOA were about 40 and 20 percent (0.4 and
13 0.2 pCi/L) of the benchmark MCL for the for the Hanford Only and Upper Bound volumes. The main
14 contributor to these concentration levels was from inventories in MLLW disposed of between 1996 and
15 2007. Combined iodine-129 levels were slightly higher at the 200 East Area SE LOA and slightly lower
16 at the 200 West Area LOA for the Upper Bound volume. These results are reflective of changes in
17 partitioning of iodine-129 inventory for the MLLW (1996-2007) waste category between the 200 East and
18 West Areas for the Upper Bound volume.

19
20 Combined concentration levels of carbon-14 and uranium isotopes at all LOAs from source areas of
21 projected LLW and MLLW did not reach their peak values until after the 10,000-year period of analysis.
22 Concentration levels for both constituents were well below the benchmark MCLs at 10,000 years.

23
24 Technetium-99 and iodine-129 concentrations were well below benchmark MCLs by the time they
25 reached the Columbia River. Overall concentration levels at the Columbia River LOA from sources in
26 the 200 East Area reached their peaks along the river between 1400 and 1500 years. Contaminant levels
27 at the same LOA from sources in the 200 West Area sources reached their peaks between 2100 and 2200
28 years.

29
30 Combined contaminant flux for technetium-99 and iodine-129 inventories in previously disposed of
31 LLW reaching the Columbia River within the 10,000 period of analysis were estimated as follows:

- 32
33 • 101 and 106 Ci of technetium-99 for the Hanford Only and Upper Bound volumes, respectively.
34 Peak loading was about 0.03 Ci /yr at about 14,700 years.
35
36 • 0.11 Ci of iodine-129 for Hanford Only and Upper Bound volumes. Peak loading was 0.0001 Ci/yr
37 at about 1540 years.
38

39 This amount of constituent loading does not adversely affect water quality in the Columbia River.
40

41 **G.2.5 Alternative Group D₂**

42

43 LLW considered in the Alternative D₂ include the same wastes considered in Alternative Group A but
44 disposes of Cat 1 and Cat 3 LLW and MLLW in a single, lined modular trench after 2007 in

1 LLBG 218-E-12b. Results for Alternative D₂ are summarized in Tables G.20, G.21 and G.22 and
2 Figures G.46 through G.51. Results for this alternative group include:

- 3
- 4 • Predicted peak concentrations of key radionuclides from an LLBG in groundwater at the 1-km
5 (0.6-mi) LOA down-gradient from wastes disposed of after 1996 for Lower Bound, Hanford Only,
6 and Upper Bound volumes (Table G.20)
- 7
- 8 • Predicted peak concentrations of key radionuclides from an LLBG in groundwater along the
9 Columbia River for wastes disposed of after 1996 for Lower Bound, Hanford Only, and Upper Bound
10 volumes (Table G.21)
- 11
- 12 • Predicted peak river fluxes of key radionuclides from an LLBG to the Columbia River for wastes
13 disposed of after 1996 for Lower Bound, Hanford Only, and Upper Bound volumes (Table G.22).
- 14

15 **G.2.5.1 Previously Disposed of Wastes**

- 16

17 Impact results presented for previously disposed of wastes before 1996 for Alternative Group A in
18 Tables G.7a, b, and c also apply to Alternative Group D₂.

- 19

20 **G.2.5.2 Wastes Disposed of After 1995**

- 21

22 The highest impacts for this alternative reflect emplacement of LLW and MLLW disposed of after
23 2007 in the 218-E-12b LLBG. These impacts were primarily from technetium-99 and iodine-129.

- 24

25 Combined technetium-99 levels at the 200 East Area NW LOA were about 16 and 19 percent
26 (148 and 169 pCi/L) of the benchmark MCL for the Hanford Only and Upper Bound volumes. The
27 primary source for these elevated levels was from inventories in Cat 3 LLW and MLLW disposed of after
28 2008.

- 29

30 Combined concentration levels of technetium-99 at the 200 West Area LOA were about 5 and
31 3 percent (42 and 31 pCi/L) of the benchmark MCL for the Hanford Only and Upper Bound volumes,
32 respectively. These values are slightly less than levels estimated for Alternative Group A. The source of
33 these impacts was primarily from the technetium-99 inventory in MLLW disposed of between 1996 and
34 2007. Decreased concentrations for the Upper Bound volume reflect the emplacement of some of the
35 MLLW inventory in the 200 East Area.

- 36

37 The highest combined iodine-129 levels at the 200 East Area NW LOAs were about 86 and
38 95 percent (0.86 and 0.95 pCi/L) of the benchmark MCL for the Hanford Only volume. The main
39 contributor to these concentration levels was inventories in MLLW disposed of after 2008.

- 40

41 The highest combined iodine-129 levels were about 40 and 20 percent (0.4 and 0.2 pCi/L) of the
42 benchmark MCL at the 200 West Area LOA for the Hanford Only volume. The main contributor to these
43 concentration levels was inventories in MLLW disposed of between 1996 and 2007.

- 44

1 The highest iodine-129 levels were slightly higher at the 200 East Area NW LOA and slightly lower
2 at the 200 West Area LOA for the Upper Bound volume. This is reflective of changes in the partitioning
3 of the iodine-129 inventory for the MLLW (1996-2007) waste category between the 200 East and West
4 Areas for the Upper Bound volume.

5
6 Concentration levels of carbon-14 and uranium isotopes at the 1-km (0.6-mi) LOA did not reach their
7 peak values until after the 10,000-year period of analysis. Concentration levels for both constituents
8 were well below the benchmark MCLs at 10,000 years.

9
10 Technetium-99 and iodine-129 concentrations were well below the benchmark MCLs by the time
11 they reached the Columbia River. Overall concentration levels at the Columbia River LOA from sources
12 in the 200 East Area reached their peaks between 1500 and 1600 years. Contaminant levels from sources
13 in the 200 West Area reached their peaks along the river at about 2000 years.

14
15 Combined contaminant flux for technetium-99 and iodine-129 inventories in previously disposed of
16 LLW reaching the Columbia River within the 10,000-year period of analysis were estimated as follows:

- 17
18 • 101 and 106 Ci of technetium-99 for the Hanford Only and Upper Bound volumes, respectively.
19 Peak loading was about 0.03 Ci/yr at about 1520 years.
20
21 • 0.11 Ci of iodine-129 for Hanford Only and Upper Bound volumes. Peak loading was 0.0001 Ci/yr at
22 about 1640 years.

23
24 This amount of constituent loading does not adversely affect water quality in the Columbia River.
25

26 **G.2.6 Alternative Group D₃**

27
28 LLW considered in the Alternative D₃ include the same wastes considered in Alternative Group A but
29 disposes of Cat 1 and Cat 3 LLW and MLLW in a single, lined modular trench after 2007 in ERDF. The
30 melter trench and the ILAW disposal facility would also be placed at ERDF. Results for Alternative
31 Group D₃ are summarized in Tables G.23, G.24, and G.25 and Figures G.52 through G.59. Results for
32 this alternative group include:

- 33
34 • Predicted peak concentrations of key radionuclides from an LLBG in groundwater at the 1 km
35 (0.6 mi) LOA down-gradient from wastes disposed of after 1996 for Lower Bound, Hanford Only,
36 and Upper Bound volumes (Table G.23)
37
38 • Predicted peak concentrations of key radionuclides from an LLBG in groundwater along the
39 Columbia River for wastes disposed of after 1996 for Lower Bound, Hanford Only, and Upper Bound
40 volumes (Table G.24)
41
42 • Predicted peak river fluxes of key radionuclides from an LLBG to the Columbia River for wastes
43 disposed of after 1996 for Lower Bound, Hanford Only, and Upper Bound volumes (Table G.25).
44

G.2.6.1 Previously Disposed of wastes

Impact results presented for previously disposed of wastes before 1996 for Alternative Group A in Tables G.7a, b, and c also apply to Alternative Group D₃.

G.2.6.2 Wastes Disposed of After 1995

The highest water quality impacts for this alternative reflect emplacement of LLW and MLLW disposed of after 2007 at the ERDF. Impacts were primarily from technetium-99 and iodine-129.

No LLW and MLLW were disposed of after 1996 in the 200 East Area for the Hanford Only volumes under this alternative group. Combined technetium-99 levels at the 200 East Area NW LOA were about 2 percent (15.7 pCi/L) of benchmark MCLs for the Upper Bound volume. The primary source for these elevated levels was from inventories in MLLW disposed of between 1996 and 2007.

Combined technetium-99 levels at the 200 West Area LOA were about 5 and 3 percent (42 and 31 pCi/L) of the benchmark MCL for the Hanford Only and Upper Bound volumes. These values are slightly less than levels estimated for Alternative Group A. The source of these impacts was primarily from the technetium-99 inventory in MLLW disposed of between 1996 and 2007. Decreased concentrations for the Upper Bound volume reflect the emplacement of some of the MLLW inventory in the 200 East Area.

Combined technetium-99 levels at the ERDF LOA were about 27 and 28 percent (242 and 253 pCi/L) of benchmark MCLs for the Hanford Only and Upper Bound volumes. The primary source for these elevated levels was from inventories in Cat 3 LLW disposed of after 2008.

No LLW and MLLW were disposed of after 1996 in the 200 East Area for the Hanford Only volume under this alternative group. Combined iodine-129 levels at the 200 East Area NW LOA were about 95 percent (0.95 pCi/L) of the benchmark MCL for the Upper Bound volume. The main contributor to these concentration levels was iodine-129 inventories in MLLW disposed of between 1996 and 2007.

Combined iodine-129 levels at the 200 West Area LOA were 40 and 20 percent (0.4 and 0.2 pCi/L) of the benchmark MCL for the Hanford Only volume. The main contributor to these concentration levels was from inventories in MLLW disposed of between 1996 and 2007.

Combined iodine-129 levels at the 200 West Area LOA were slightly higher at the 200 East Area NW LOA and slightly lower for the Upper Bound volume. This result reflects assumed changes in the partitioning of the iodine-129 inventory for the MLLW (1996-2007) waste category between the 200 East and West Areas for the Upper Bound volume.

Combined iodine-129 levels at the ERDF LOA were 92 and 94 percent (0.92 and 0.94 pCi/L) of the benchmark MCL for the Hanford Only volume. The main contributor to these concentration levels was from inventories in MLLW disposed of after 2008.

Concentration levels of carbon-14 and uranium isotopes at all LOAs down-gradient from source areas of projected LLW and MLLW did not reach their peak values until after the 10,000-year period of analysis. Concentration levels for both constituents were well below benchmark MCLs at 10,000 years.

Combined technetium-99 and iodine-129 concentrations were well below benchmark MCLs by the time they reached the Columbia River. Overall concentration levels from sources in the 200 East Area reached their peaks along the river at about 1400 years. Contaminant levels from sources in the 200 West Area reached their peaks along the river about 2000 years.

Combined contaminant flux for technetium-99 and iodine-129 inventories in previously disposed of LLW reaching the Columbia River within the 10,000-year period of analysis were estimated as follows:

- 122 and 132 Ci of technetium-99 for the Hanford Only and Upper Bound volumes, respectively. Peak loading was about 0.04 Ci /yr between 2000 and 2100 years.
- 0.14 Ci of iodine-129 for Hanford Only and Upper Bound volumes. Peak loading was 0.0001 Ci/yr at about 2100 years.

This amount of constituent loading does not adversely affect water quality in the Columbia River.

G.2.7 Alternative Group E₁

LLW considered in Alternative Group E₁ includes the same wastes considered in Alternative Group A but disposes of Cat 1 and Cat 3 LLW and MLLW in a single, lined modular trench after 2007 in LLBG 218-E-12b. The melter trench and the ILAW disposal facility would be placed at ERDF. Results for Alternative E₁ are summarized in Tables G.26, G.27, and G.28 and Figures G.60 through G.67. Results for this alternative group include:

- Predicted peak concentrations of key radionuclides from an LLBG in groundwater at the 1-km (0.6-mi) LOA down-gradient from wastes disposed of after 1996 for Lower Bound, Hanford Only, and Upper Bound volumes (Table G.26)
- Predicted peak concentrations of key radionuclides from an LLBG in groundwater along the Columbia River for wastes disposed of after 1996 for Lower Bound, Hanford Only, and Upper Bound volumes (Table G.27)
- Predicted peak river fluxes of key radionuclides from an LLBG to the Columbia River for wastes disposed of after 1996 for Lower Bound, Hanford Only, and Upper Bound volumes (Table G.28).

G.2.7.1 Previously Disposed of Wastes

Impact results presented for previously disposed of wastes before 1996 for Alternative Group A in Tables G.7a, b, c also apply to Alternative Group E₁.

G.2.7.2 Wastes Disposed of After 1995

Impacts for this alternative reflect emplacement of LLW and MLLW disposed of after 2007 in 218-E-12B and the disposal of melters and ILAW at ERDF. Results for LLW and MLLW disposed of after 2007, excluding the melters are identical to results for the same wastes in Alternative D₂. The highest impacts resulted from releases of technetium-99 and iodine-129.

Combined technetium-99 levels at the 200 East Area NW LOA were about 16 and 19 percent (148 and 169 pCi/L) of the benchmark MCL for the Hanford Only and Upper Bound volumes. The primary source of these elevated levels was from inventories in Cat 3 LLW and MLLW disposed of after 2008.

Combined technetium-99 levels at the 200 West Area LOA were about 5 and 3 percent (42 and 31 pCi/L) of the benchmark MCL for the Hanford Only and Upper Bound volumes. These values are slightly less than levels estimated for Alternative Group A. The source of these impacts was primarily from the technetium-99 inventory in MLLW disposed of between 1996 and 2007. Decreased concentrations for the Upper Bound volume reflect the emplacement of some of the MLLW inventory in the 200 East Area.

Combined technetium-99 levels at the ERDF LOA were about 0.3 percent (2.7 pCi/L) of the benchmark MCL for both the Hanford Only and Upper Bound volumes. The primary source for these elevated levels was from inventories in the melters disposed of after 2008.

No LLW and MLLW were disposed of after 1996 in the 200 East Area for the Hanford Only volume under this alternative. Combined iodine-129 levels at the 200 East Area NW LOA were 95 percent (0.95 pCi/L) of the benchmark MCL for the Upper Bound volume. The main contributor to these concentration levels was from inventories in MLLW disposed of between 1996 and 2007.

Combined iodine-129 levels at the 200 West Area LOA were 40 and 20 percent (0.4 and 0.2 pCi/L) of the benchmark MCL for the Hanford Only and Upper Bound volumes. The main contributor to these concentration levels was from inventories in MLLW disposed of between 1996 and 2007.

Combined iodine-129 levels at the 200 West Area LOA were slightly higher at the 200 East Area NW LOA and slightly lower for the Upper Bound volume, which is reflective of changes in the partitioning of the iodine-129 inventory for the MLLW (1996-2007) waste category between the 200 East and West Areas for the Upper Bound volume.

Combined iodine-129 levels were 22 percent (0.22 pCi/L) at the ERDF LOA for the Hanford Only and Upper Bound volume. No iodine-129 inventory was estimated for melters disposed of at ERDF after 2007 for this alternative group.

Concentration levels of carbon-14 and uranium isotopes at the 1-km (0.6-m) well down-gradient from source areas of projected LLW and MLLW did not reach their peak values until after the 10,000-year

period of analysis. Concentration levels for both constituents were well below the applicable DWS at 10,000 years.

Technetium-99 and iodine-129 concentrations were well below the DWS by the time they reached the Columbia River. Overall concentration levels at the Columbia River LOA from sources in the 200 East Area reached their peaks along the river at about 1400 years. Contaminant levels from sources in the 200 West Area reached their peaks along the river at about 2000 years.

Combined contaminant flux for technetium-99 and iodine-129 inventories in previously disposed of LLW reaching the Columbia River within the 10,000-year period of analysis were estimated as follows:

- 122 and 132 Ci of technetium-99 for the Hanford Only and Upper Bound volumes, respectively. Peak loading was about 0.04 Ci/yr between 2000 and 2100 years.
- 0.14 Ci of iodine-129 for Hanford Only and Upper Bound volumes. Peak loading was 0.0001 Ci/yr at about 2100 years.

This amount of constituent loading does not adversely affect water quality in the Columbia River.

G.2.8 Alternative Group E₂

LLW considered in Alternative E₂ includes the same wastes considered in Alternative Group A but disposes of Cat 1 and Cat 3 LLW and MLLW in a single-lined modular trench after 2007 near the PUREX Plant. The melter trench and the ILAW disposal facility would be placed at ERDF. Results for Alternative Group E₂ are summarized in Tables G.29, G.30, and G.31 and Figures G.68 through G.75. Results for this alternative group include:

- Predicted peak concentrations of key radionuclides from an LLBG in groundwater at the 1-km (0.6-mi) LOA down-gradient from wastes disposed of after 1996 for Lower Bound, Hanford Only, and Upper Bound volumes (Table G.29)
- Predicted peak concentrations of key radionuclides from an LLBG in groundwater along the Columbia River for wastes disposed of after 1996 for Lower Bound, Hanford Only, and Upper Bound volumes (Table G.30)
- Predicted peak river fluxes of key radionuclides from an LLBG to the Columbia River for wastes disposed of after 1996 for Lower Bound, Hanford Only, and Upper Bound volumes (Table G.31).

G.2.8.1 Previously Disposed of Wastes

Various results presented for previously disposed of wastes before 1996 for Alternative Group A in Tables G.7a, b, c also apply to Alternative Group E₂.

G.2.8.2 Wastes Disposed of After 1995

Impacts for this alternative group reflect emplacement of LLW and MLLW disposed of after 2007 near the PUREX Plant and the disposal of melter and ILAW at ERDF. Results for LLW and MLLW disposed of after 2007, excluding the melter are identical to results for the same wastes in Alternative Group D₁ (see Section G.2.4). Results for the melter were the same as those calculated for Alternative Group E₁ (see Section G.2.7).

G.2.9 Alternative Group E₃

LLW considered in Alternative Group E₃ include the same wastes considered in Alternative A but disposes of Cat 1 and Cat 3 LLW and MLLW in a single, lined modular trench after 2007 at ERDF. The melter trench and the ILAW disposal facility would be placed near the PUREX Plant. Results for Alternative Group E₃ are summarized in Tables G.32, 33, and G.34 and Figures G.76 through G.83. Results for this alternative group include:

- Predicted peak concentrations of key radionuclides from an LLBG in groundwater at the 1-km (0.6-mi) LOA down-gradient from wastes disposed of after 1996 for Lower Bound, Hanford Only, and Upper Bound volumes (Table G.32)
- Predicted peak concentrations of key radionuclides from an LLBG in groundwater along the Columbia River for wastes disposed of after 1996 for Lower Bound, Hanford Only, and Upper Bound volumes (Table G.33)
- Predicted peak river fluxes of key radionuclides from an LLBG to the Columbia River for wastes disposed of after 1996 for Lower Bound, Hanford Only, and Upper Bound volumes (Table G.34).

G.2.9.1 Previously Disposed of Wastes

Various results presented for previously disposed of wastes before 1996 for Alternative Group A in Tables G.7a, b, c also apply to Alternative Group E₃.

G.2.9.2 Wastes Disposed of After 1995

Impacts for this alternative reflect emplacement of LLW and MLLW disposed of after 2007 near the PUREX Plant and the disposal of melter MLLW and ILAW at ERDF. Results for LLW and MLLW disposed of after 2007, excluding the melter, are identical to results for the same wastes in Alternative Group D₃ (see Section G.2.6).

Results for Alternative Group E₃ for combined technetium-99 and iodine-129 concentration levels for Hanford Only and Upper Bound volumes are summarized in Section 5.3, Figures 5.20 and 5.21. Additional information can be found in several tables and figures referenced in Section G.2.9.

Combined technetium-99 levels were slightly less than 2.5 percent (22 pCi/L) of the benchmark MCL at the 200 East Area SE LOA for the Hanford Only volume. The impact for the Hanford Only volume reflects the melter and ILAW disposals near the PUREX Plant. The highest combined iodine-129 levels at the 200 East Area SE LOA were about 0.2 percent (0.2 pCi/L) of the benchmark MCL for the Hanford Only and Upper Bound volumes as a result of the ILAW disposal near the PUREX Plant.

G.2.10 No Action Alternative

LLW considered in the No Action Alternative includes wastes to be disposed of in several categories:

- LLW disposed of prior to 1970
- LLW disposed of after 1970 but before 1988
- LLW disposed of between 1988 and 1995
- Cat 1 LLW disposed of in conventional trenches between 1996 and 2007
- Cat 3 LLW and GTC3 LLW disposed of in conventional trenches between 1996 and 2007
- MLLW disposed of in conventional trenches between 1996 and 2007
- Cat 1 and Cat 3 LLW and MLLW disposed of in conventional trenches in LLBGs 218-E-12b and 218-W-5.

Contaminants considered in the LLW categories include estimated inventories associated with Lower Bound and Hanford Only waste volumes of 220,925 and 190,164 m³ of LLW, respectively. Contaminants considered in the MLLW category include estimated inventories associated with Lower Bound and Hanford Only waste volumes of 79,502 m³ and 79,379 m³ of MLLW, respectively.

Results for the No Action Alternative are summarized in Tables G.35a, b, and c; G.36; G.37; and G.38 and Figures G.84 through G.89. Results for the No Action Alternative include:

- Predicted peak concentrations of key radionuclides from an LLBG in groundwater at the 1-km (0.6-mi) LOA down-gradient from the waste sites for LLW disposed of prior to 1996 for the Lower Bound volume (Table G.35a) and LLW and MLLW disposed of between 1996 and 2007 for Lower Bound and Hanford Only volumes (Table G.36)
- Predicted peak concentrations of key radionuclides from an LLBG in groundwater along the Columbia River for wastes disposed of prior to 1996 for the Lower Bound volume (Table G.35b) and between 1996 and 2007 for Lower Bound and Hanford Only volumes (Table G.37)

- Predicted peak river fluxes of key radionuclides from an LLBG to the Columbia River for wastes disposed of prior to 1996 for the Lower Bound volume (Table G.35c) and between 1996 and 2007 for Lower Bound and Hanford Only volumes (Table G.38).

G.2.10.1 Previously Disposed of Wastes

The highest water quality impacts from previously disposed of wastes are related to technetium-99 and iodine-129 releases. Estimated concentrations of technetium-99 and iodine-129 peaked at about 110 years at the 200 East Area NW LOA and about 220 years at the 200 West Area LOA. Combined levels of technetium-99 were less than 2 percent (18 pCi/L) at the 200 East Area NW and West LOAs. Combined levels of iodine-129 at the 200 East Area NW LOA were less than 0.1 percent (0.09 pCi/L) of the benchmark MCL.

Combined levels of iodine-129 at the 200 West Area LOA were about 50 percent (0.5 pCi/L) of the benchmark MCL. This concentration level resulted from releases of the iodine-129 inventory in LLW disposed of between 1970 and 1987.

Carbon-14 and uranium isotopes concentration levels were found to peak at about or beyond 10,000 years. Carbon-14 concentrations were well below the DWS of 2000 pCi/L at the 200 East and West Area LOAs. Concentration levels of uranium-238, the dominant uranium isotope, were also well below the DWS of 30 pCi/L at the 200 East and West Area LOAs at 10,000 years. Uranium-238 concentration levels reached their peak of about 3 pCi/L between 14,000 and 16,000 years at the 200 West Area LOA.

Technetium-99 and iodine-129 concentrations were well below benchmark MCLs by the time they reached the Columbia River. Overall concentration levels from sources in the 200 East Area reached their peaks at the Columbia River LOA at about 260 years. Contaminant levels from sources in the 200 West Area reached their peaks at the Columbia River LOA between 500 and 600 years.

Combined contaminant flux for technetium-99 and iodine-129 inventories in previously disposed of LLW reaching the Columbia River within the 10,000-year period of analysis were estimated as follows:

- ~ 1 Ci of technetium-99 (peak loading at 0.001 Ci /yr between 520 -530 years)
- ~0.5 Ci of iodine-129 (peak loading at 0.001 Ci/yr at around 260 years).

This amount of constituent loading does not adversely affect water quality in the Columbia River.

G.2.10.2 Wastes Disposed of After 1995

The highest water quality impacts from LLW and MLLW disposed of after 1995 resulted from releases of technetium-99 and iodine-129. Combined technetium-99 levels at the 200 East Area NW LOA were about 8 percent (77 pCi/L) of the benchmark MCL for the Hanford Only volume. The primary source for these elevated levels was from inventories in MLLW disposed of after 1995.

1 Combined technetium-99 levels were about 25 percent (225 pCi/L) of the benchmark MCL at the
2 200 West Area LOA. The source of these impacts was primarily from the technetium-99 inventory in Cat
3 3 LLW disposed of after 1995.

4
5 Combined iodine-129 levels at the 200 East Area NW LOA were about 96 percent (0.96 pCi/L) of the
6 benchmark MCL of 1 pCi/L for the Hanford Only volume. The main contributor to these concentration
7 levels was from inventories in MLLW disposed of after 1995. The highest iodine-129 levels were about
8 40 percent (0.4 pCi/L) of the benchmark MCL at the 200 West Area LOA for the Hanford Only volume.
9 The main contributor to these concentration levels was from inventories in MLLW disposed of after 1995.

10
11 Concentration levels of carbon-14 and uranium isotopes at the 1-km (0.6-m) LOAs down-gradient
12 from source areas of LLW and MLLW disposed of after 1995 did not reach their peak values until after
13 the 10,000-year period of analysis. Concentration levels for both constituents were well below the
14 benchmark MCL at 10,000 years.

15
16 Technetium-99 and iodine-129 concentration levels were well below the benchmark MCL by the time
17 they reached the Columbia River. Overall concentration levels at the Columbia River LOA from sources
18 in the 200 East Area reached their peaks at the Columbia River LOA at 260 years for ungrouted forms of
19 technetium-99 and iodine-129 and at about 850 years for grouted forms of the inventories. Contaminant
20 levels from sources in the 200 West Area reached their peaks along the river between 1660 and 1820
21 years.

22
23 Combined contaminant flux for technetium-99 and iodine-129 inventories in previously disposed of
24 LLW reaching the Columbia River within the 10,000-year period of analysis were estimated as follows:

- 25
26 • 102 Ci of technetium-99 for the Hanford Only volume. Peak loading was about
27
28 • 0.03 Ci /yr at about 1820 years.
29
30 • 0.07 Ci of iodine-129 for the Hanford Only volume. Peak loading was 0.0001 Ci/yr at about
31 1660 years.
32

33 This amount of constituent loading does not adversely affect water quality in the Columbia River.

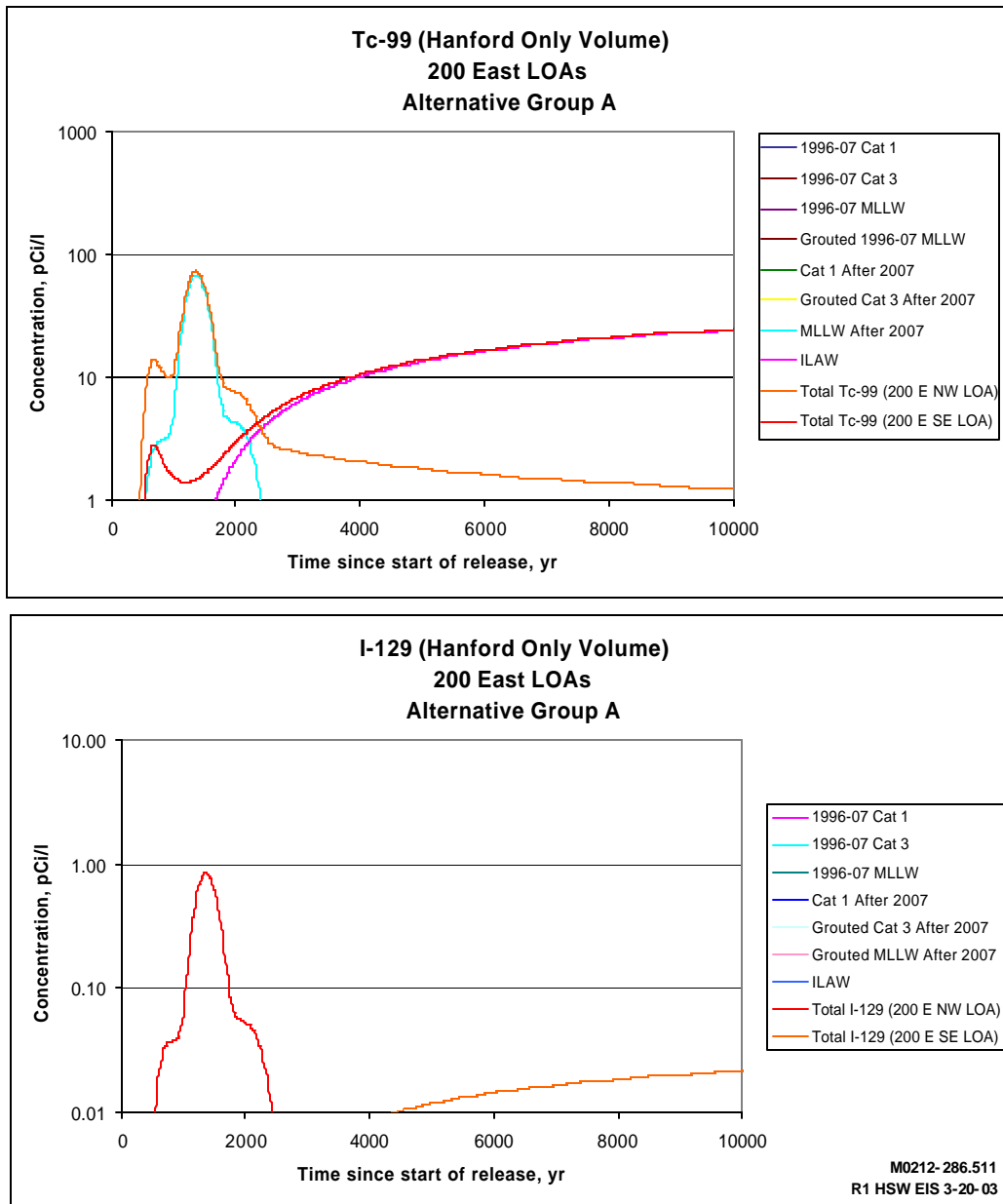


Figure G.18. Tc-99 and I-129 Concentration Profiles at 1-km Line of Analysis (200 East)
(Alternative Group A – Hanford Only Wastes Disposed of After 1995)

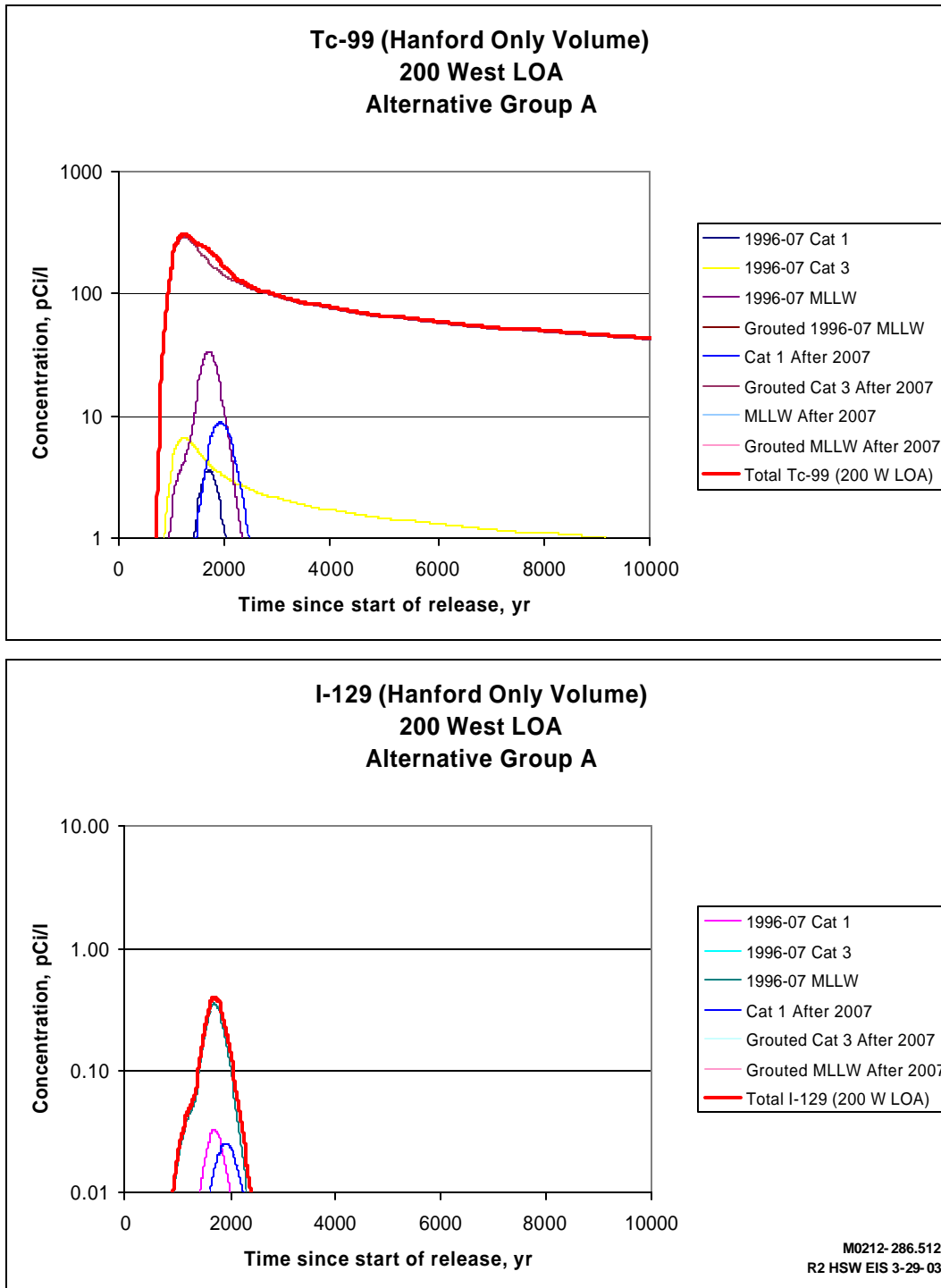


Figure G.19. Tc-99 and I-129 Concentration Profiles at 1-km Line of Analysis (200 West)
(Alternative Group A – Hanford Only Wastes Disposed of After 1995)

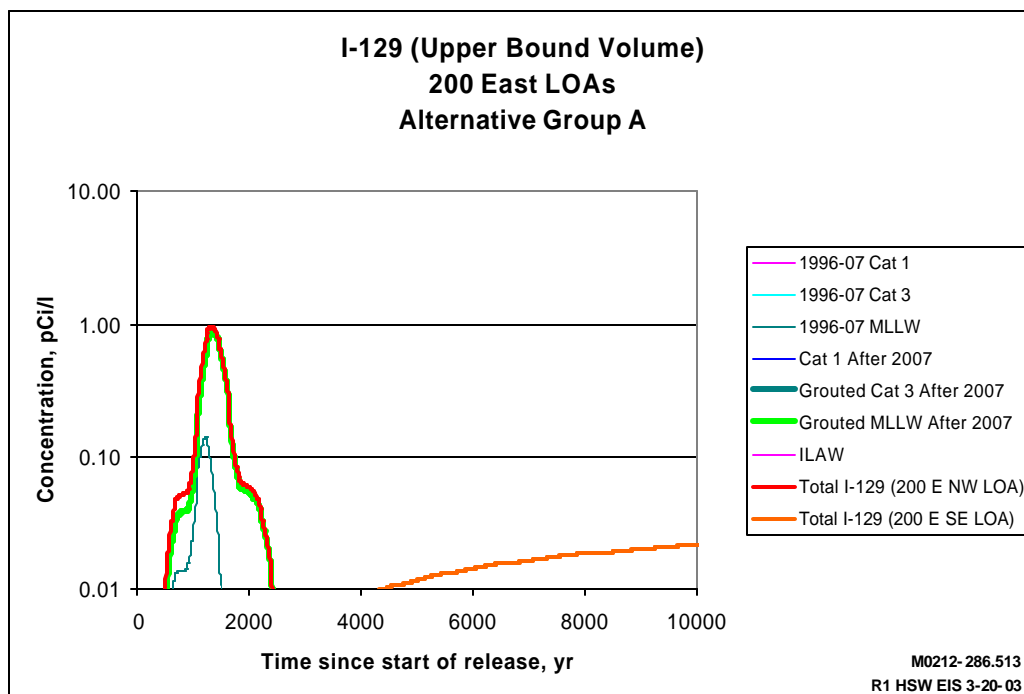
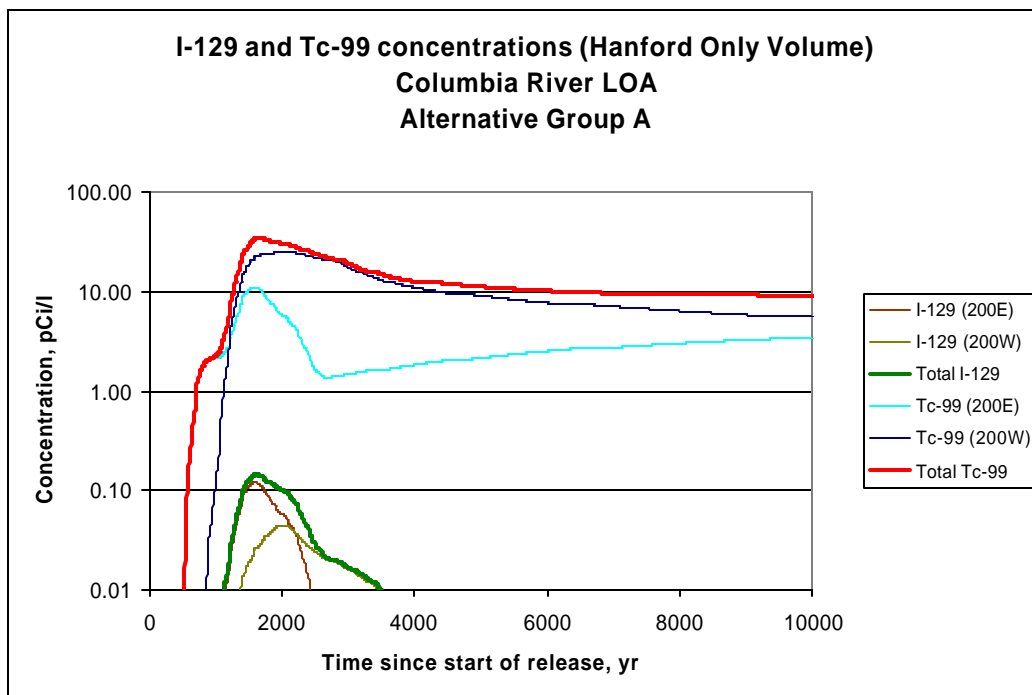


Figure G.20. I-129 and Tc-99 Concentration and River Flux Profiles Along the Columbia River (Alternative Group A – Hanford Only Wastes Disposed of After 1995)

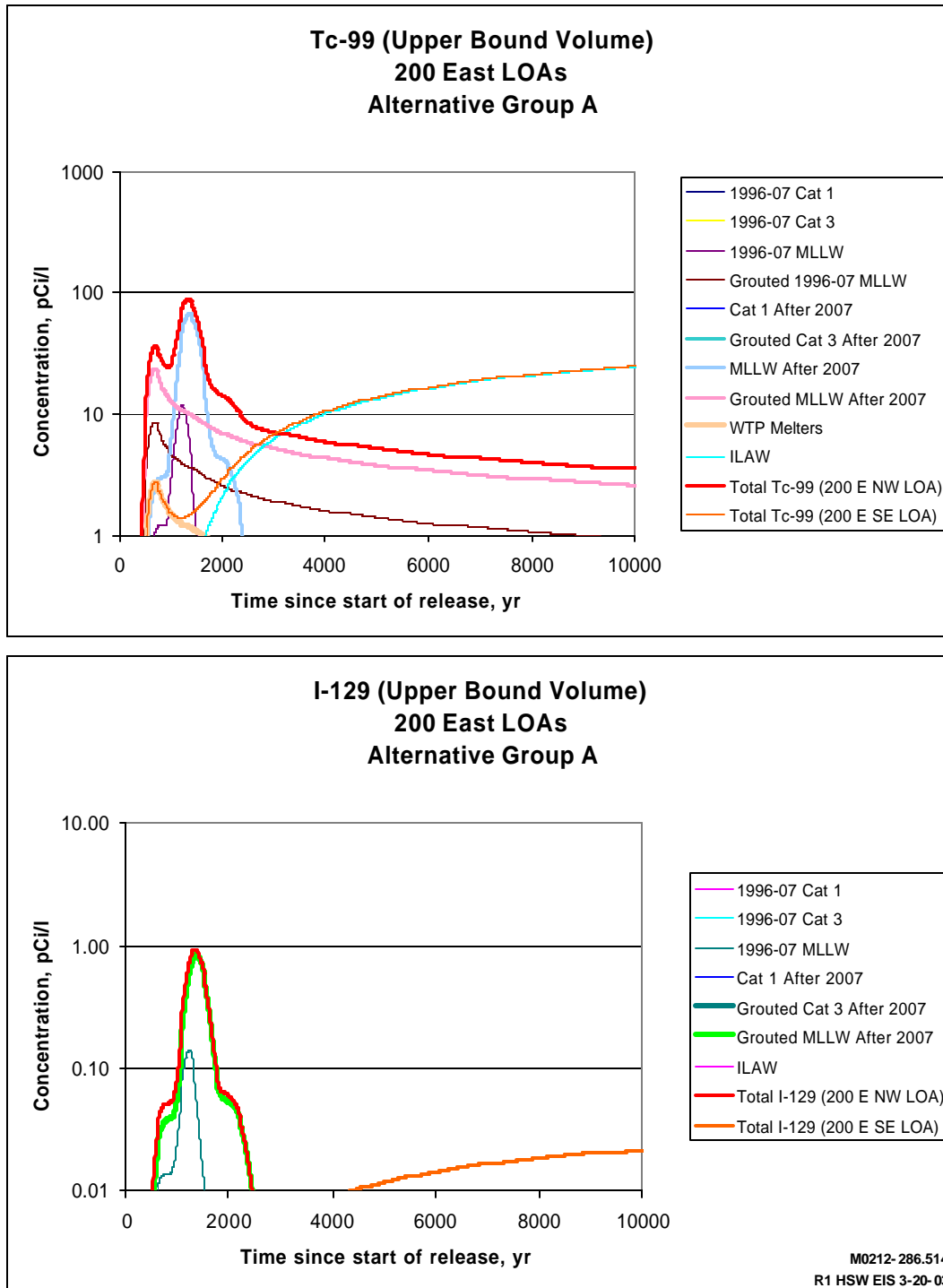


Figure G.21. Tc-99 and I-129 Concentration Profiles at 1-km Line of Analysis (200 East)
(Alternative Group A – Upper Bound Volume Wastes Disposed of After 1995)

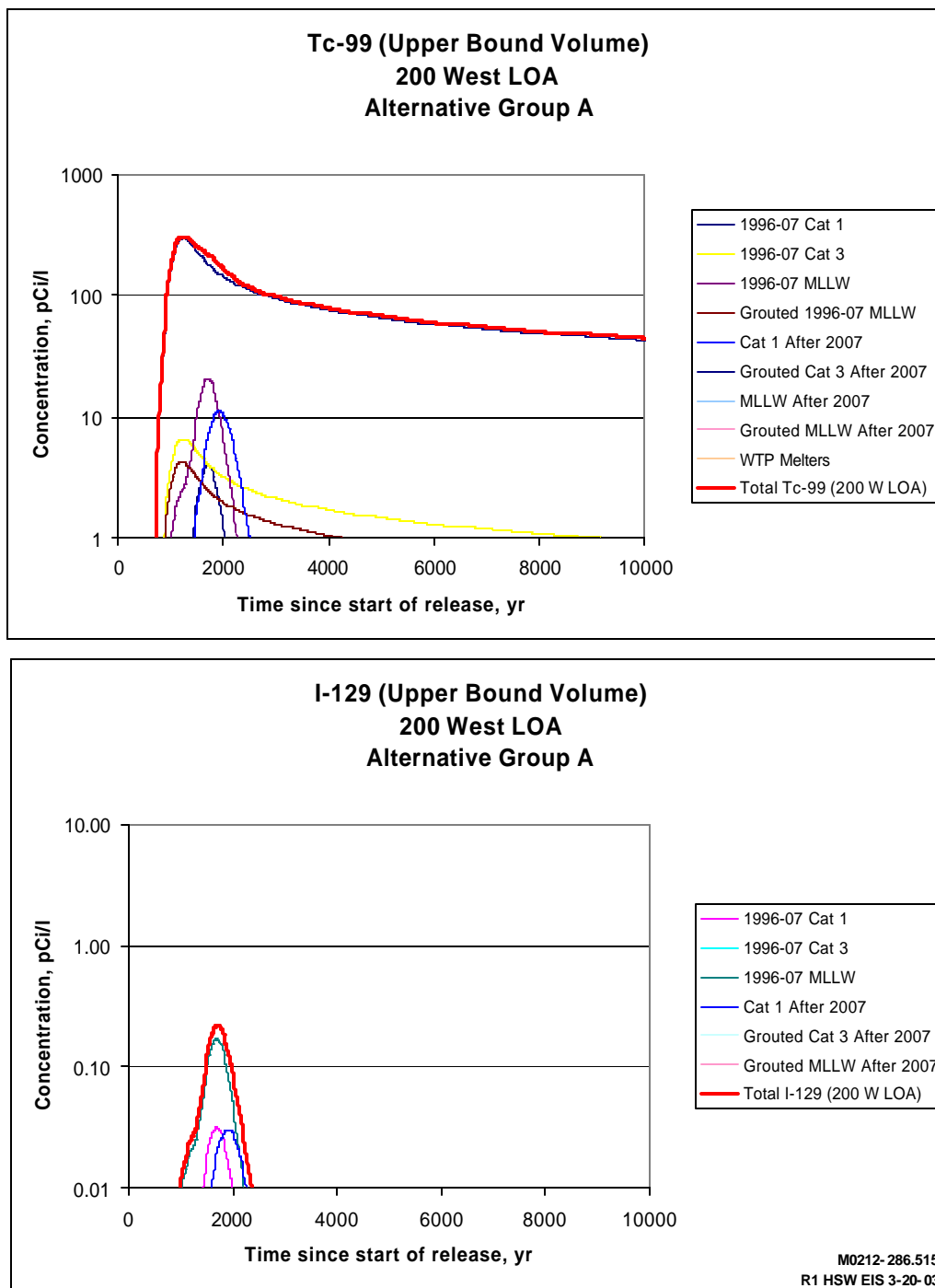


Figure G.22. Tc-99 and I-129 Concentration Profiles at 1-km Line of Analysis (200 West) (Alternative Group A – Upper Bound Volume Wastes Disposed of After 1995)

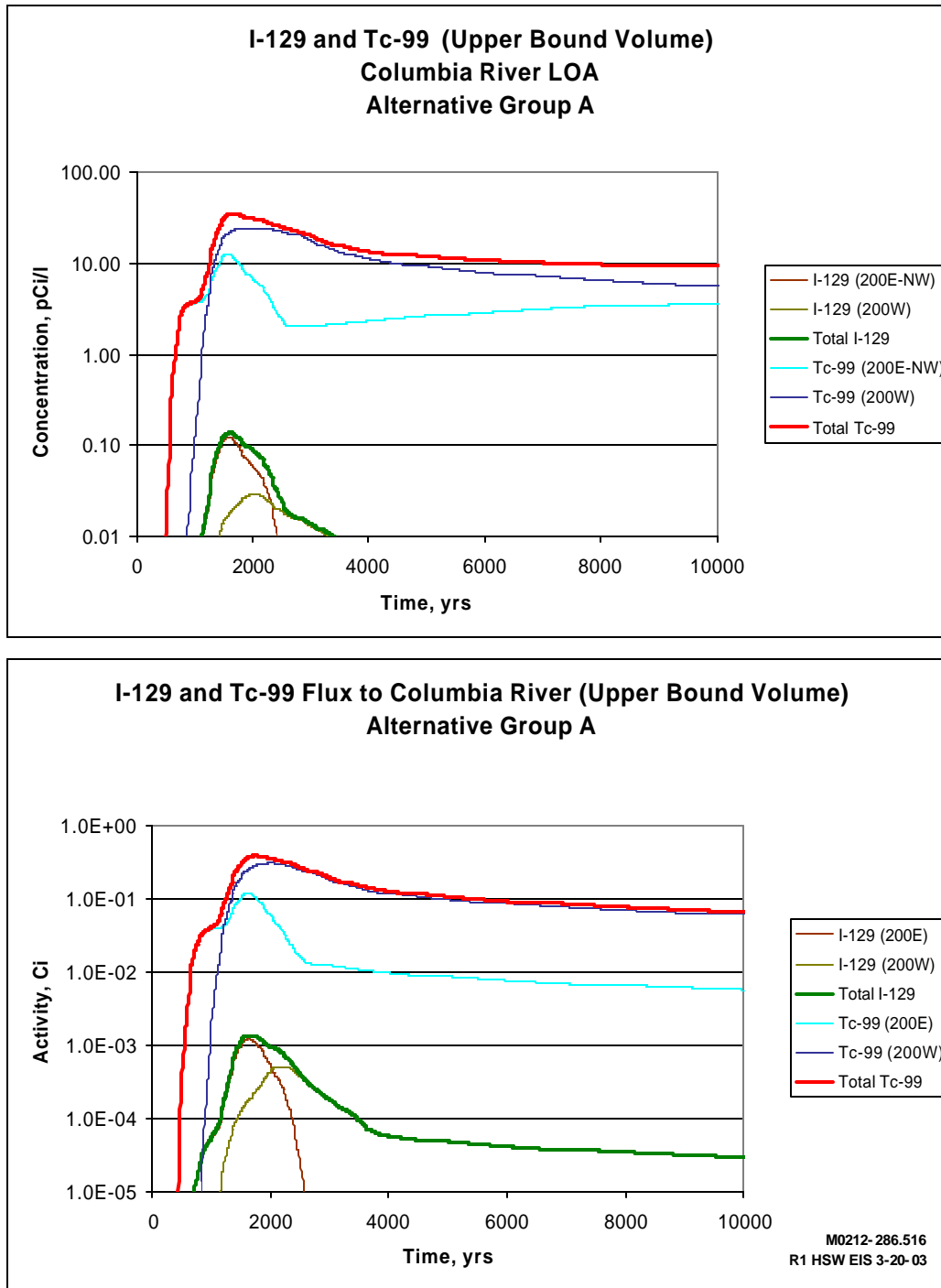


Figure G.23. I-129 and Tc-99 Concentration and River Flux Profiles Along the Columbia River
(Alternative Group A – Upper Bound Volume Wastes Disposed of After 1995)

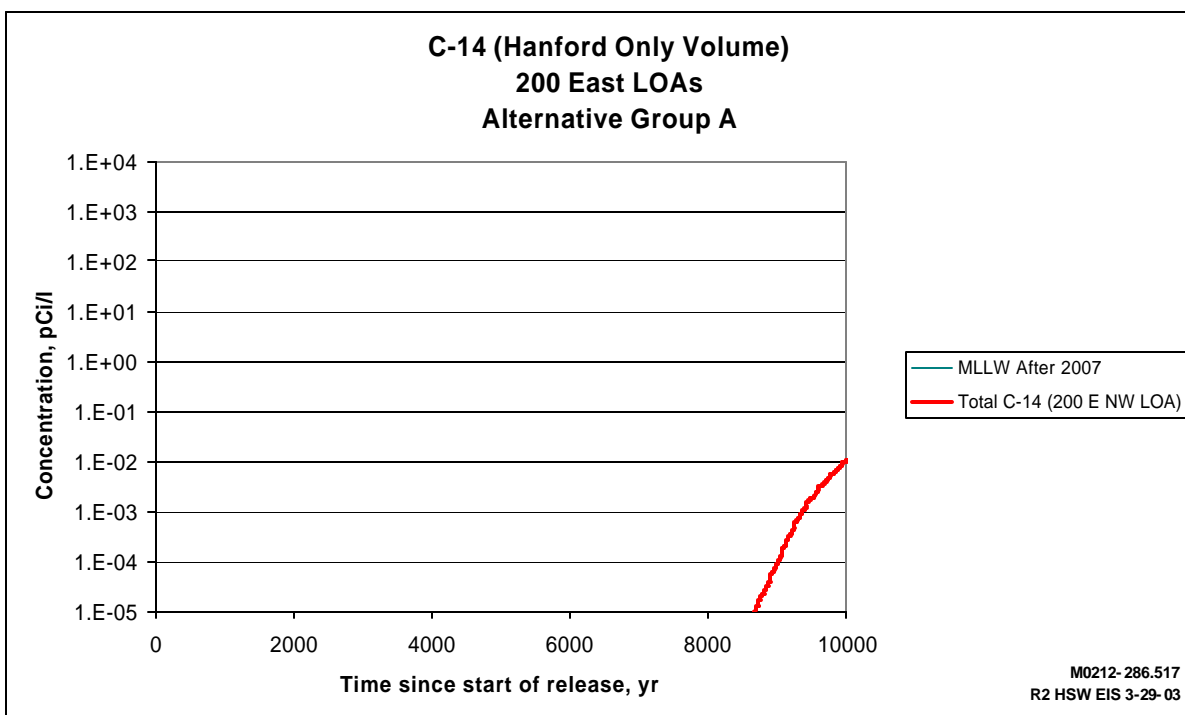
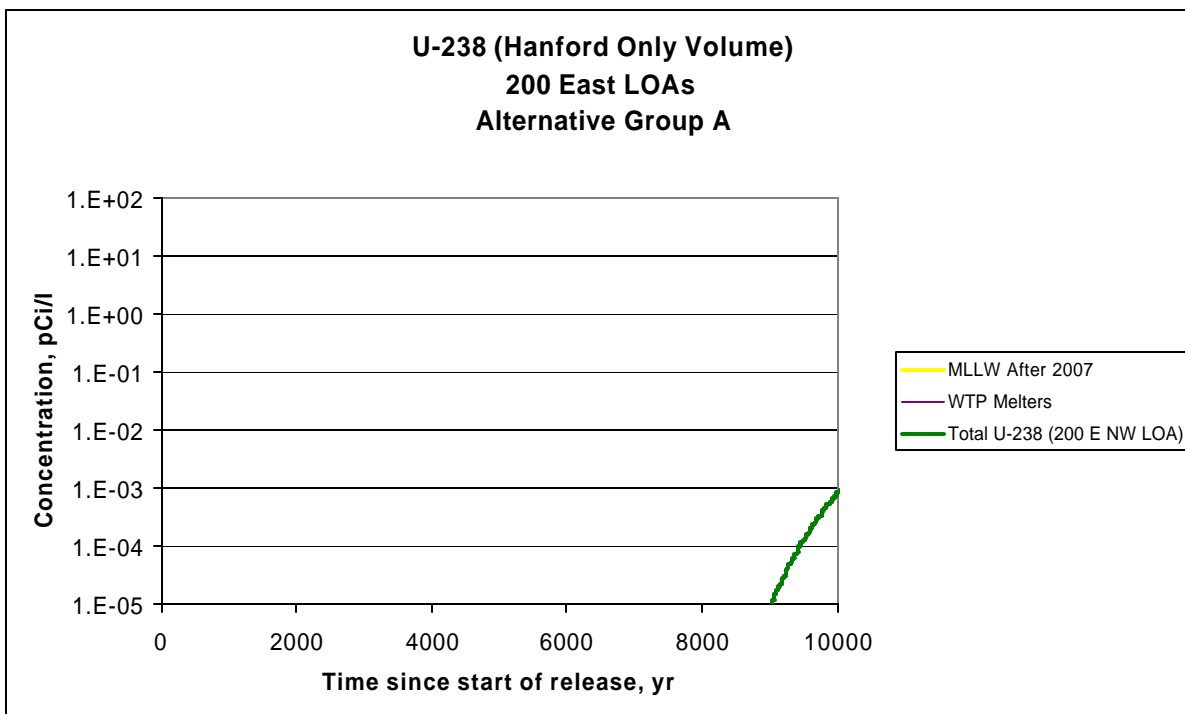


Figure G.24. U-238 and C-14 Concentration Profiles at 1-km Line of Analysis (200 East) (Alternative Group A – Hanford Wastes Disposed of After 1995)

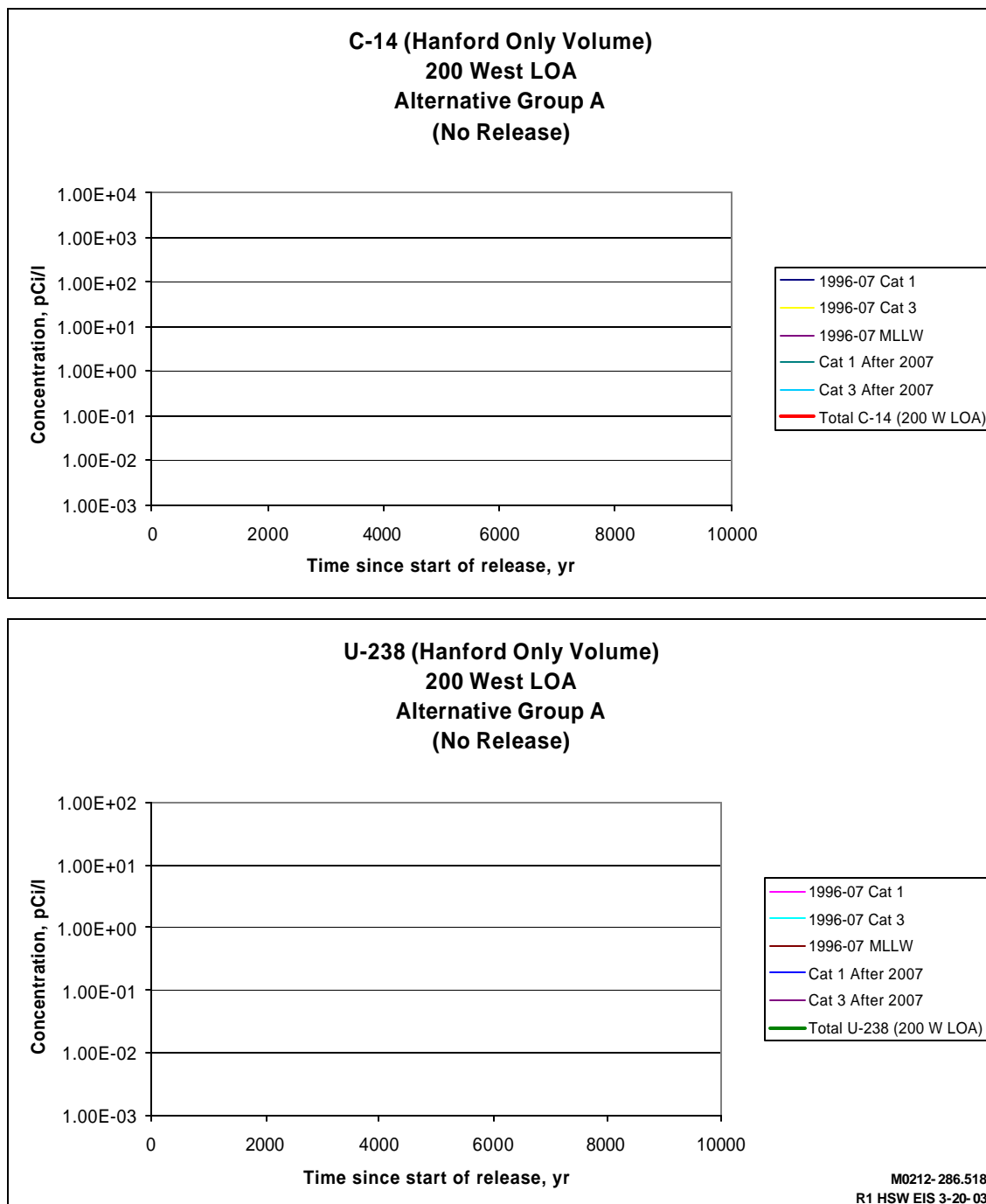


Figure G.25. U-238 and C-14 Concentration Profiles at 1-km Line of Analysis (200 East) (Alternative Group A Hanford Only Wastes Disposed of After 1995)

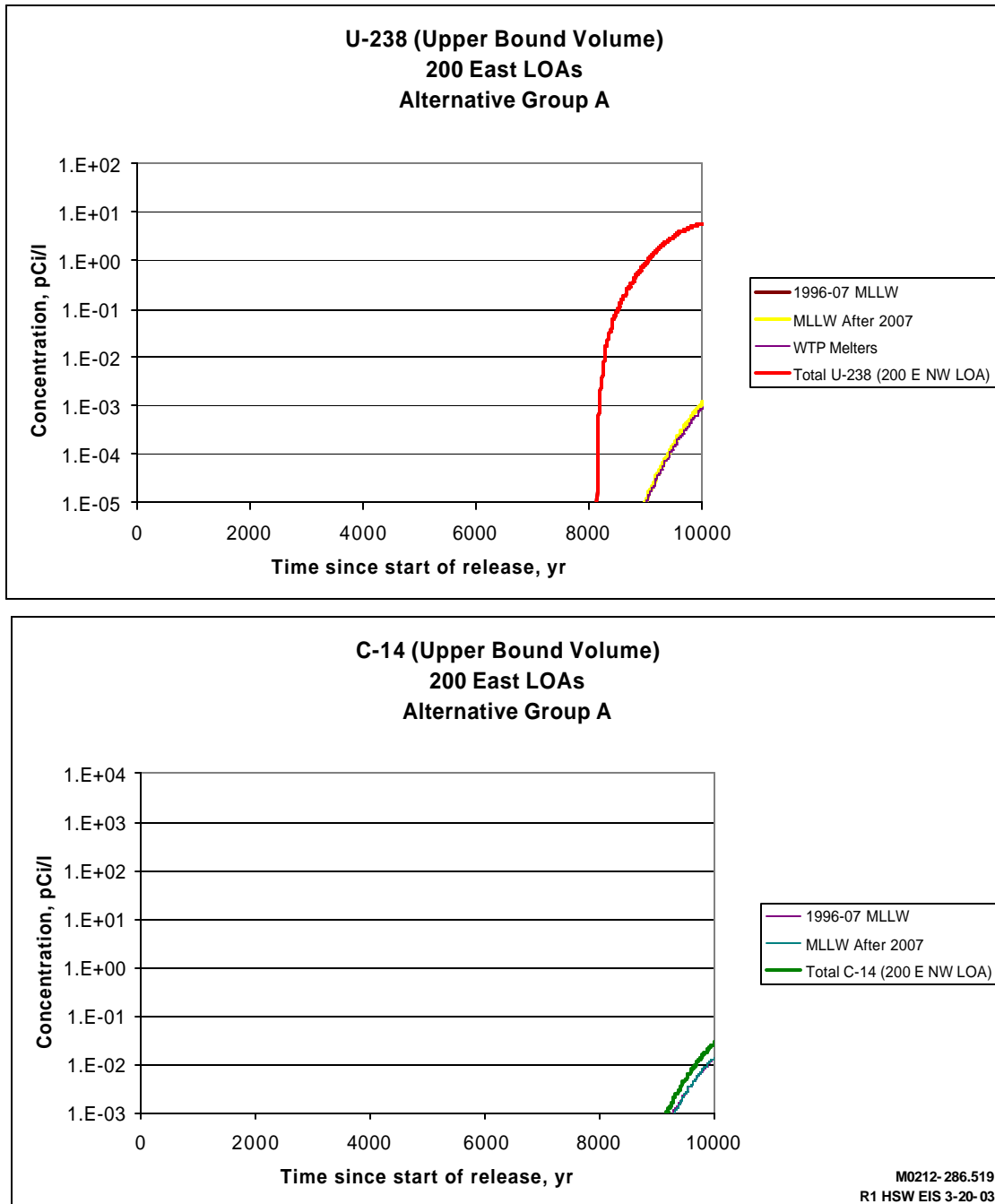


Figure G.26. U-238 and C-14 Concentration Profiles at 1-km Line of Analysis (200 East) (Alternative Group A – Upper Bound Volume Wastes Disposed of After 1995)

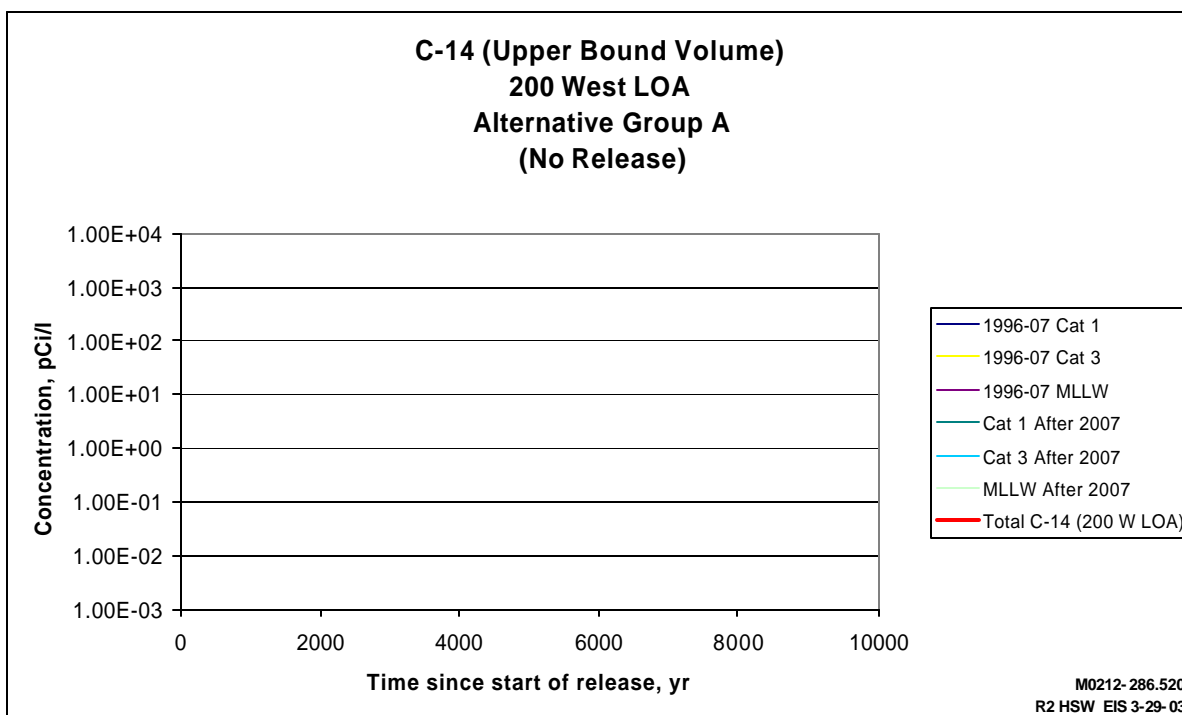
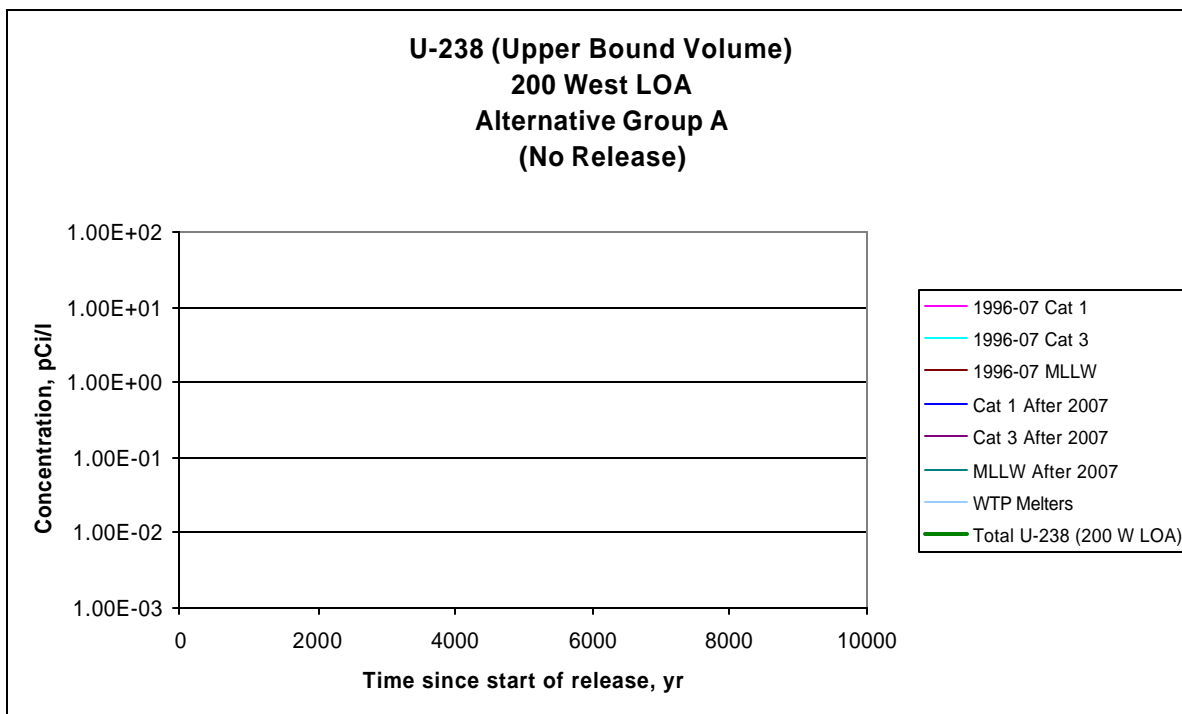


Figure G.27. U-238 and C-14 Concentration Profiles at 1-km Line of Analysis (200 West)
(Alternative Group A – Upper Bound Volume Wastes Disposed of After 1995)

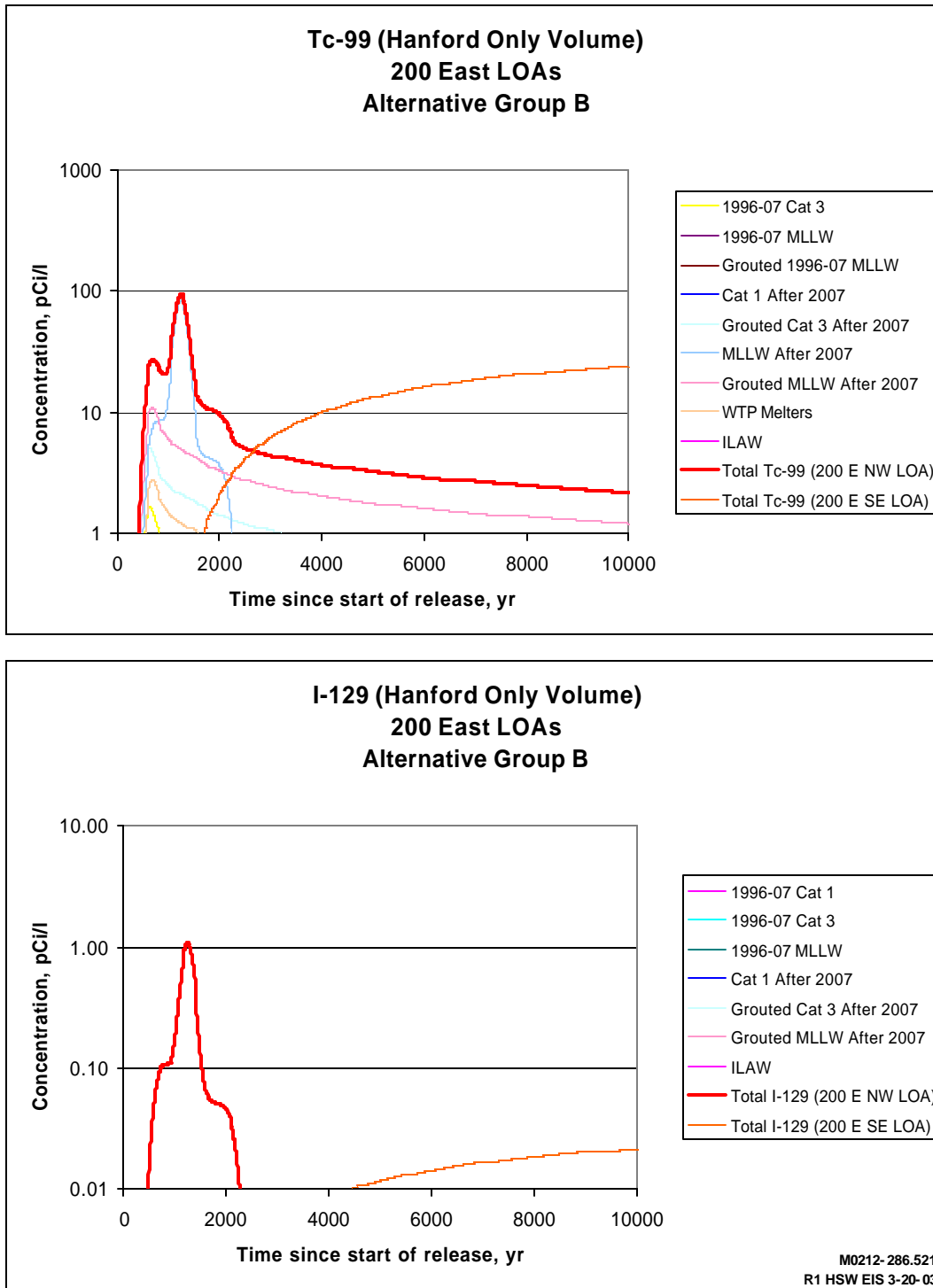


Figure G.28. Tc-99 and I-129 Concentration Profiles at 1-km Line of Analysis (200 East) (Alternative Group B – Hanford Only Wastes Disposed of After 1995)

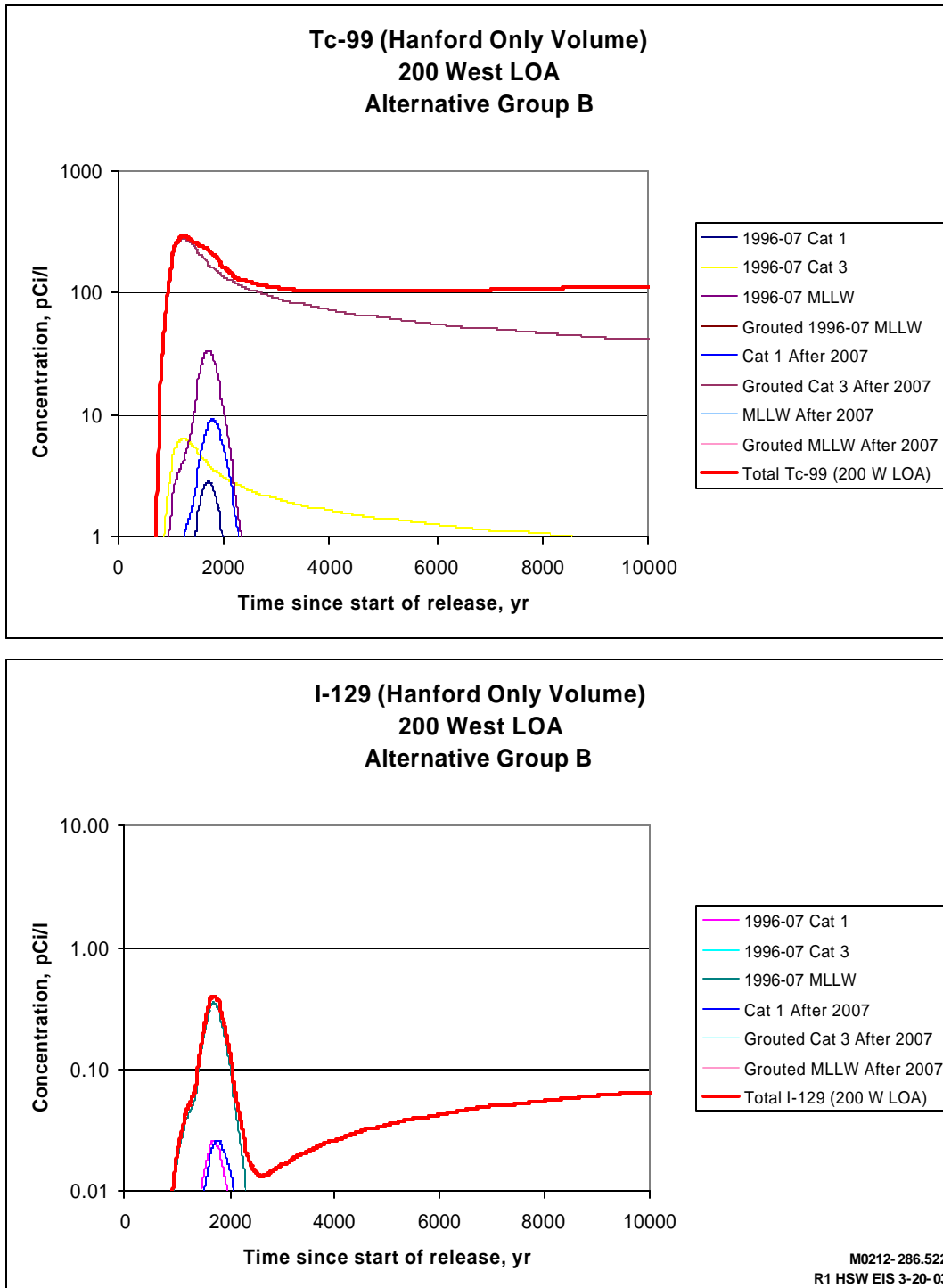


Figure G.29. Tc-99 and I-129 Concentration Profiles at 1-km Line of Analysis (200 West)
(Alternative Group B – Hanford Only Wastes Disposed of After 1995)

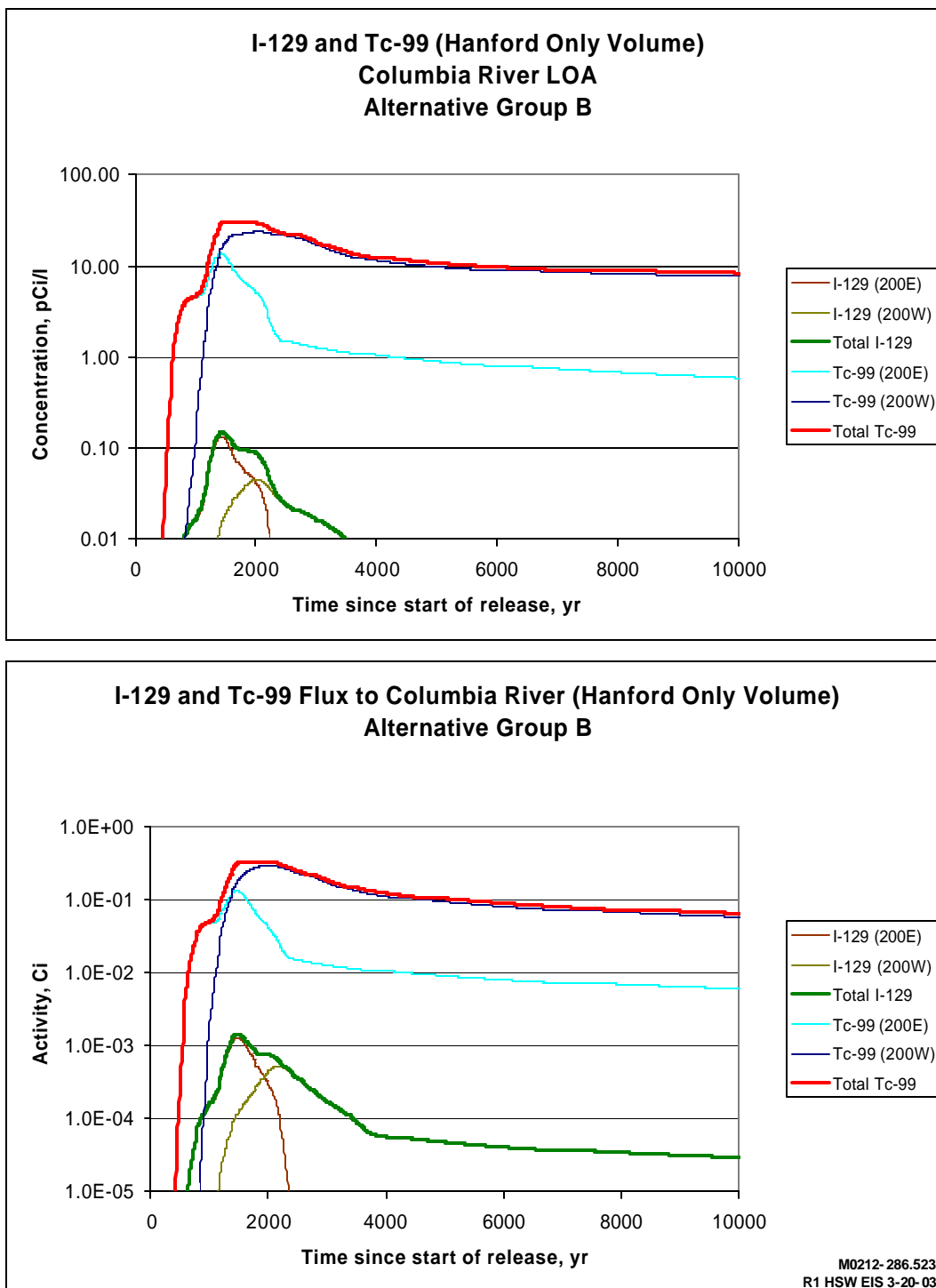


Figure G.30. I-129 and Tc-99 Concentration and River Flux Profiles Along the Columbia River (Alternative Group B – Hanford Only Wastes Disposed of After 1995)

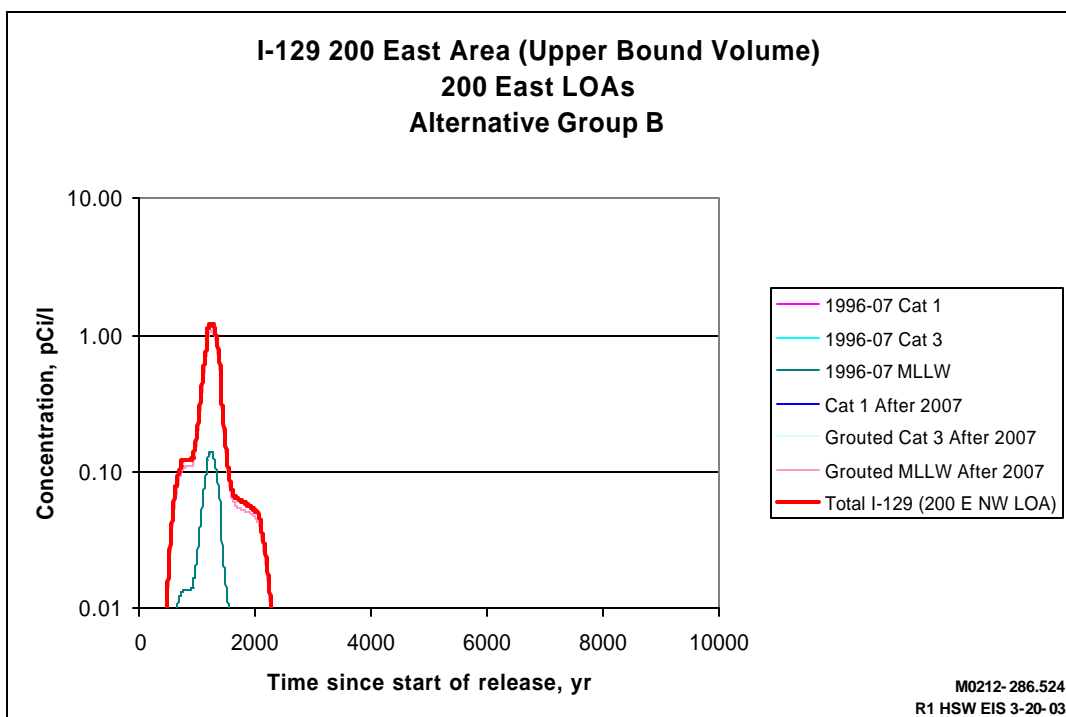
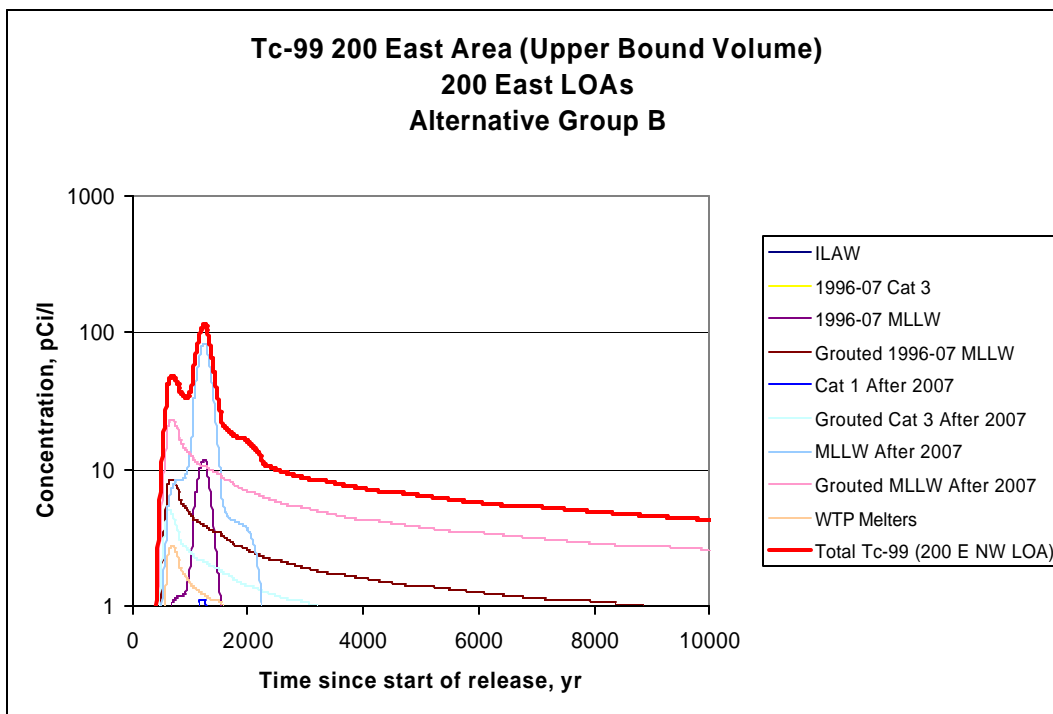


Figure G.31. Tc-99 and I-129 Concentration Profiles at 1-km Line of Analysis (200 East)
(Alternative Group B – Upper Bound Volume Wastes Disposed of After 1995)

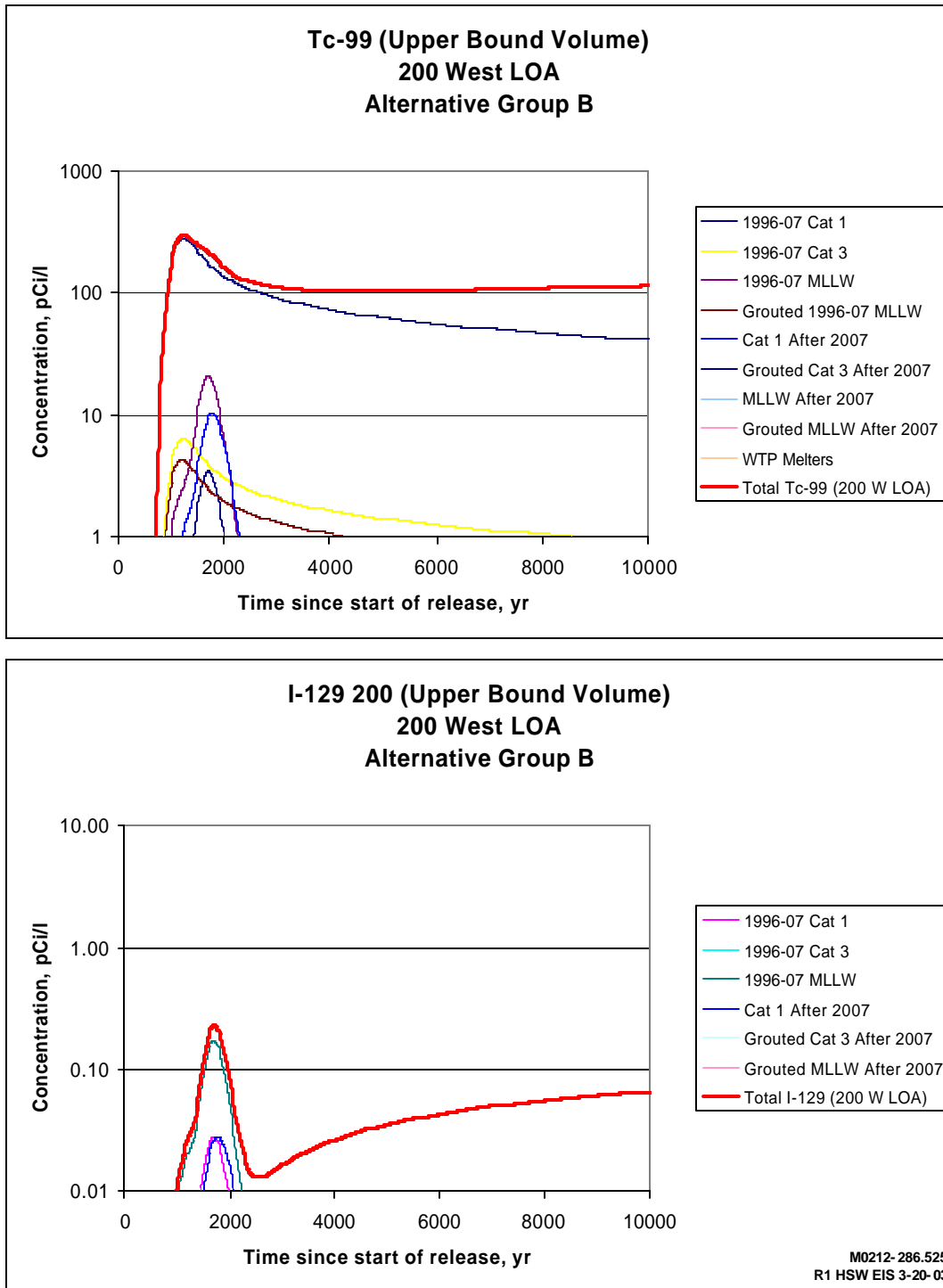


Figure G.32. Tc-99 and I-129 Concentration Profiles at 1-km Line of Analysis (200 West) (Alternative Group B – Upper Bound Volume Wastes Disposed of After 1995)

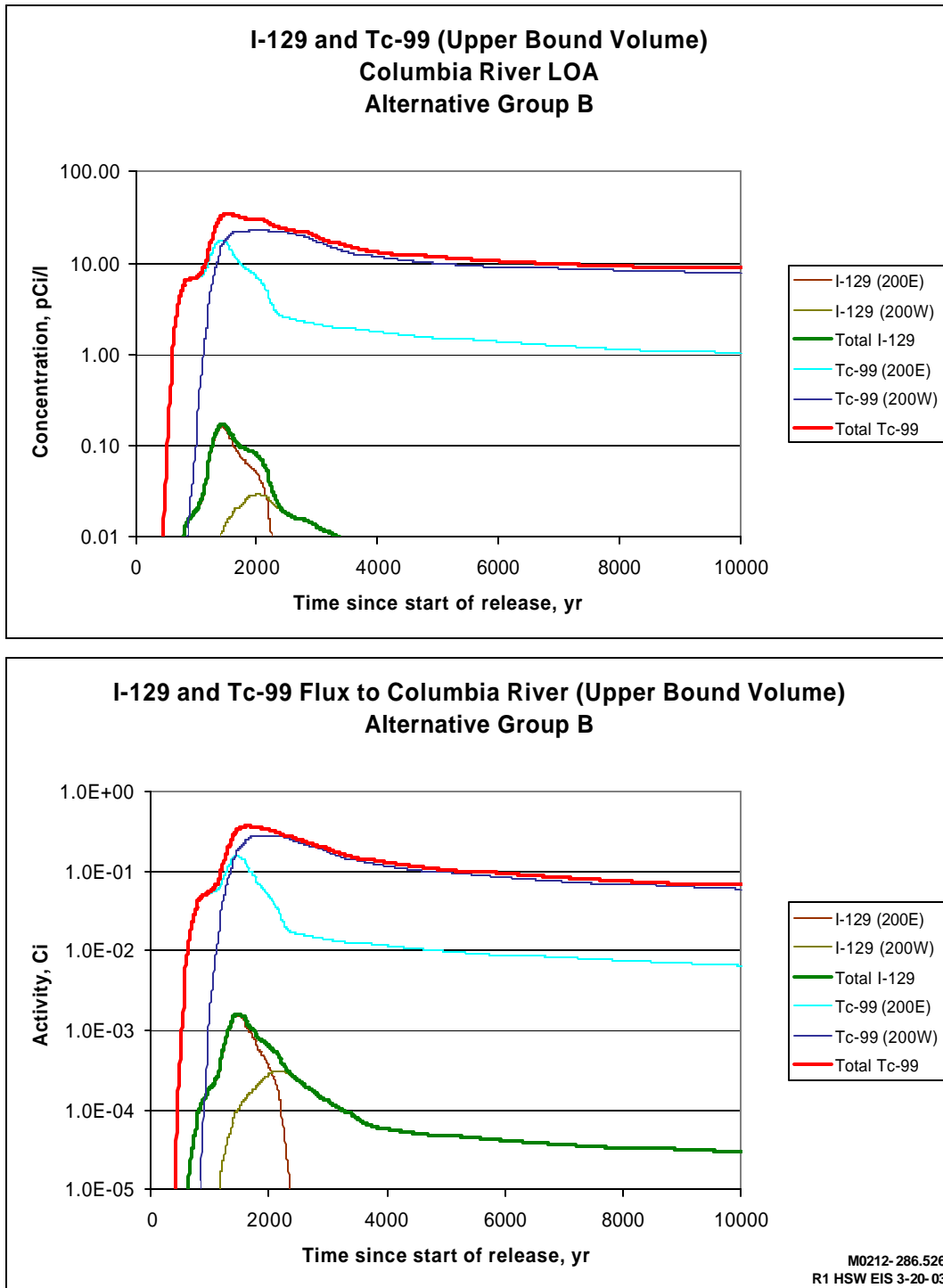


Figure G.33. I-129 and Tc-99 Concentration and River Flux Profiles Along the Columbia River
(Alternative Group B – Upper Bound Volume Wastes Disposed of After 1995)

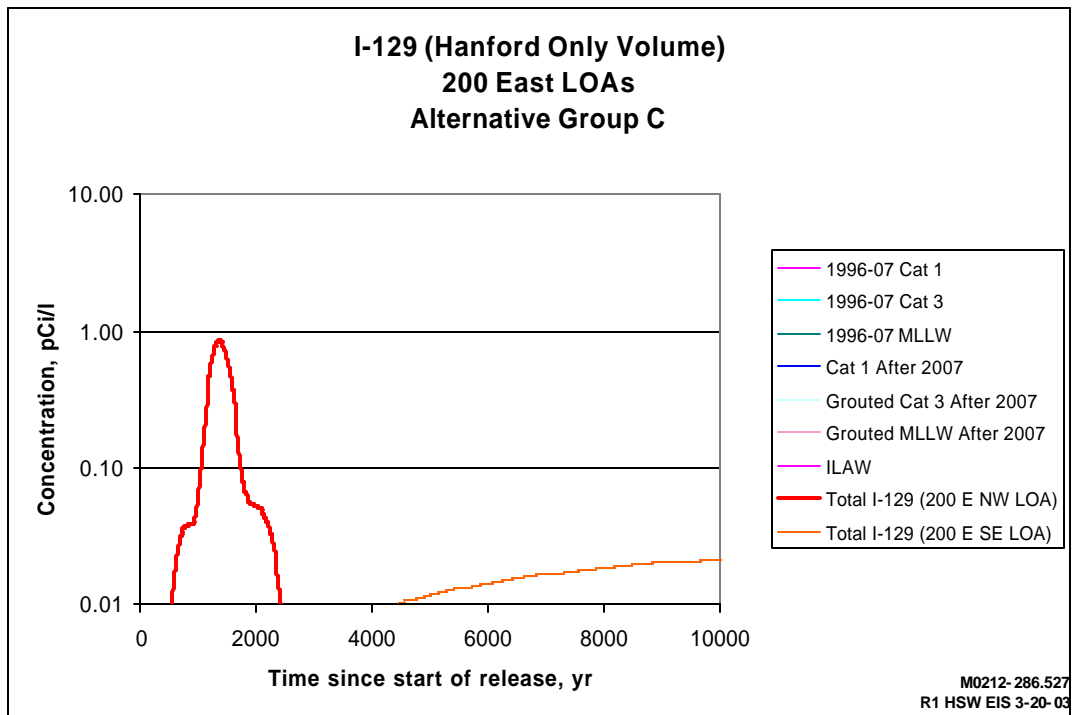
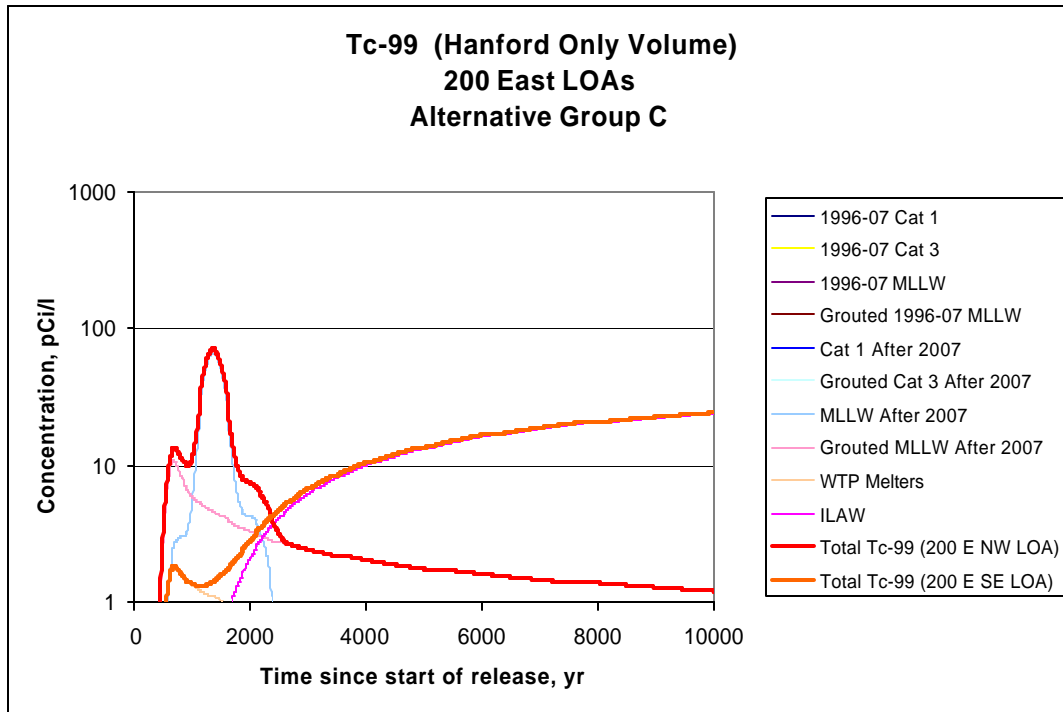


Figure G.34. Tc-99 and I-129 Concentration Profiles at 1-km Line of Analysis (200 East) (Alternative Group C – Hanford Only Wastes Disposed of After 1995)

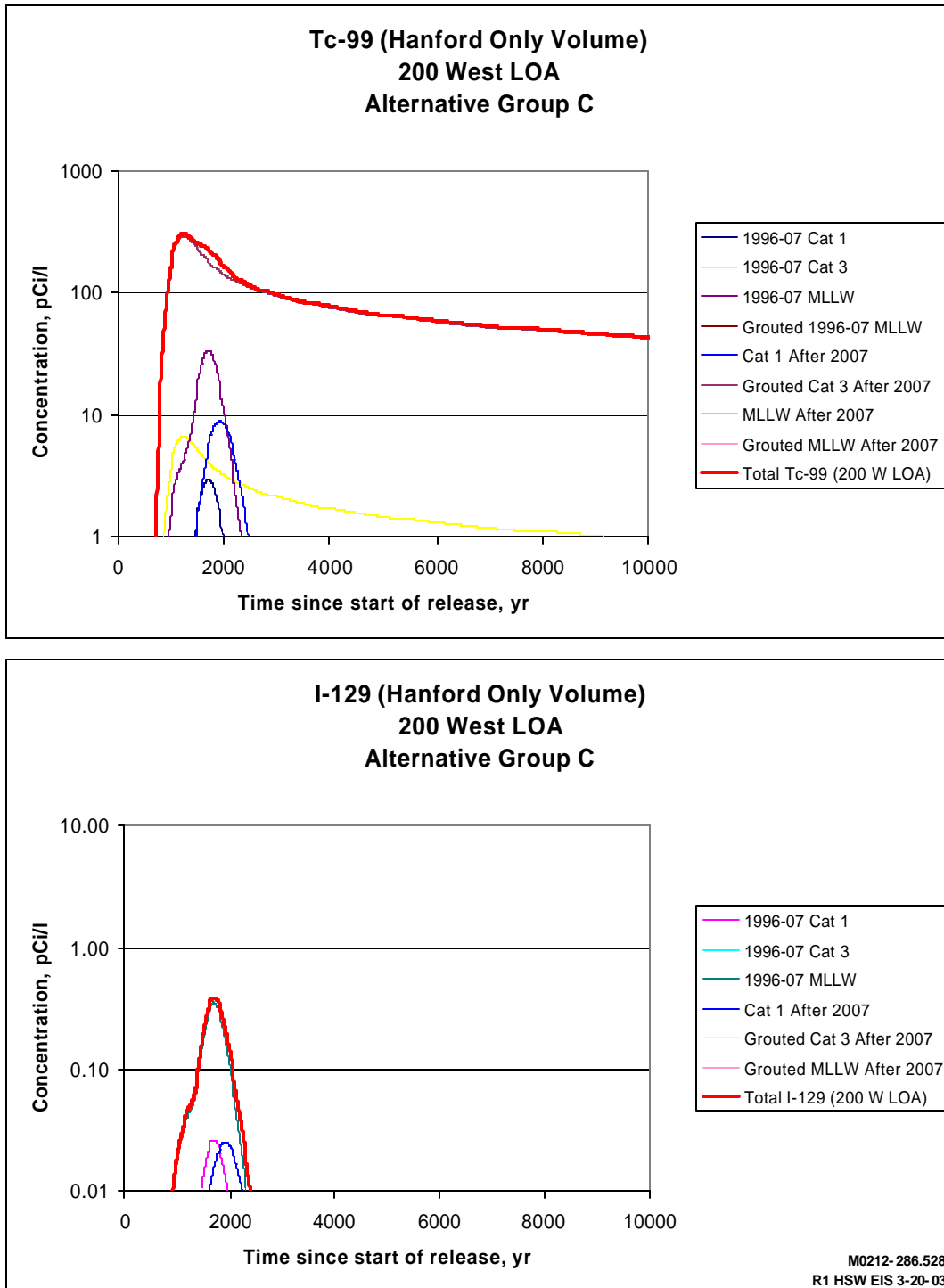


Figure G.35. Tc-99 and I-129 Concentration Profiles at 1-km Line of Analysis (200 West) (Alternative Group C – Hanford Only Wastes Disposed of After 1995)

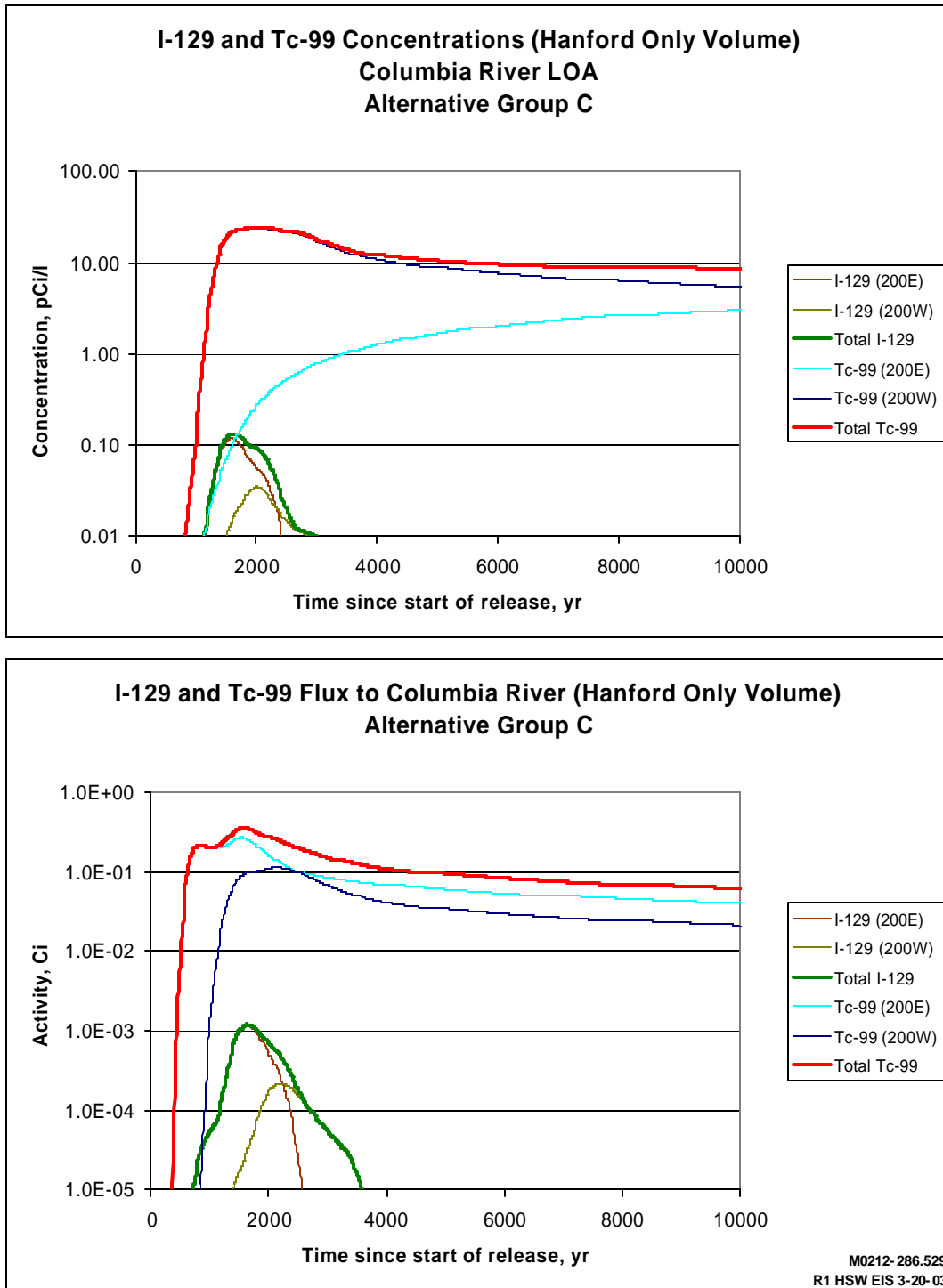


Figure G.36. I-129 and Tc-99 Concentration and River Flux Profiles Along the Columbia River
(Alternative Group C – Hanford Only Wastes Disposed of After 1995)

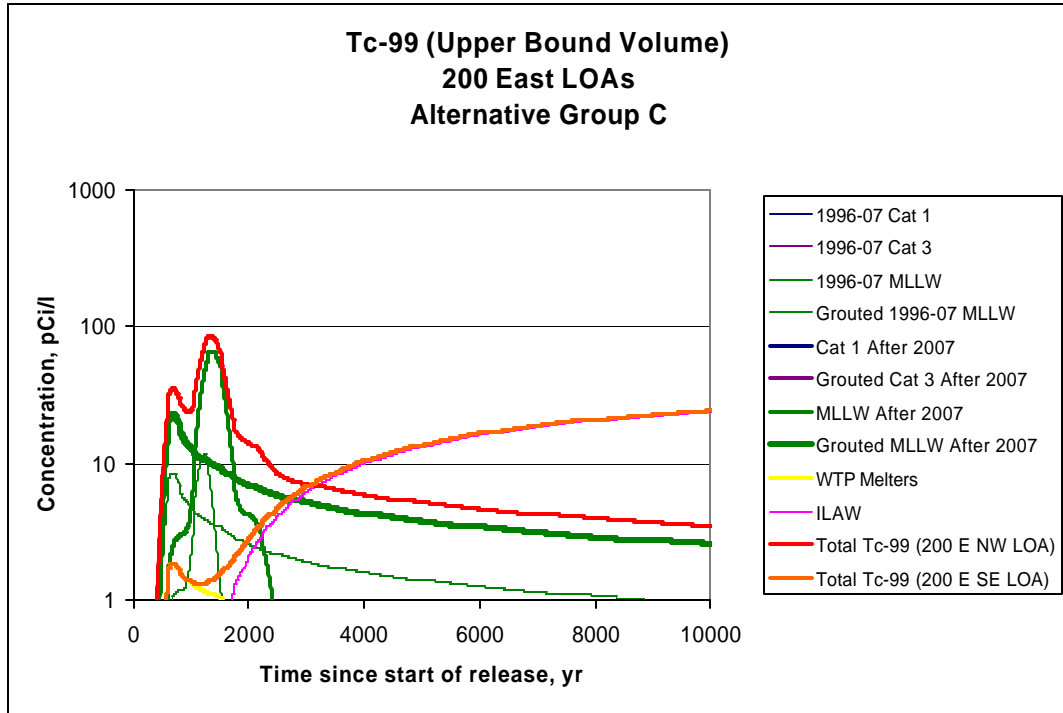


Figure G.37. Tc-99 and I-129 Concentration Profiles at 1-km Line of Analysis (200 East)
(Alternative Group C – Upper Bound Volume Wastes Disposed of After 1995)

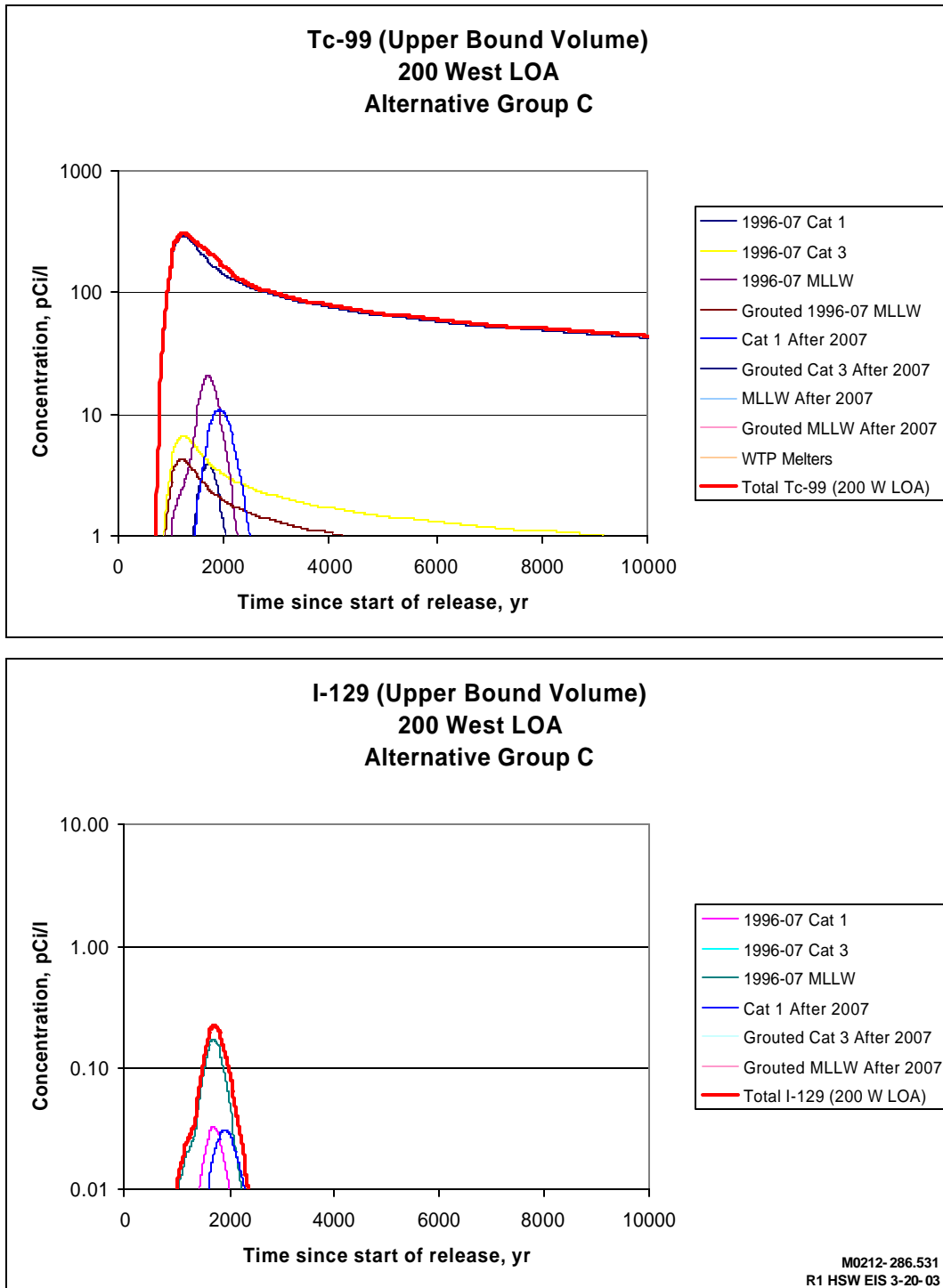


Figure G.38. Tc-99 and I-129 Concentration Profiles at 1-km Line of Analysis (200 West) (Alternative Group C – Upper Bound Volume Wastes Disposed of After 1995)

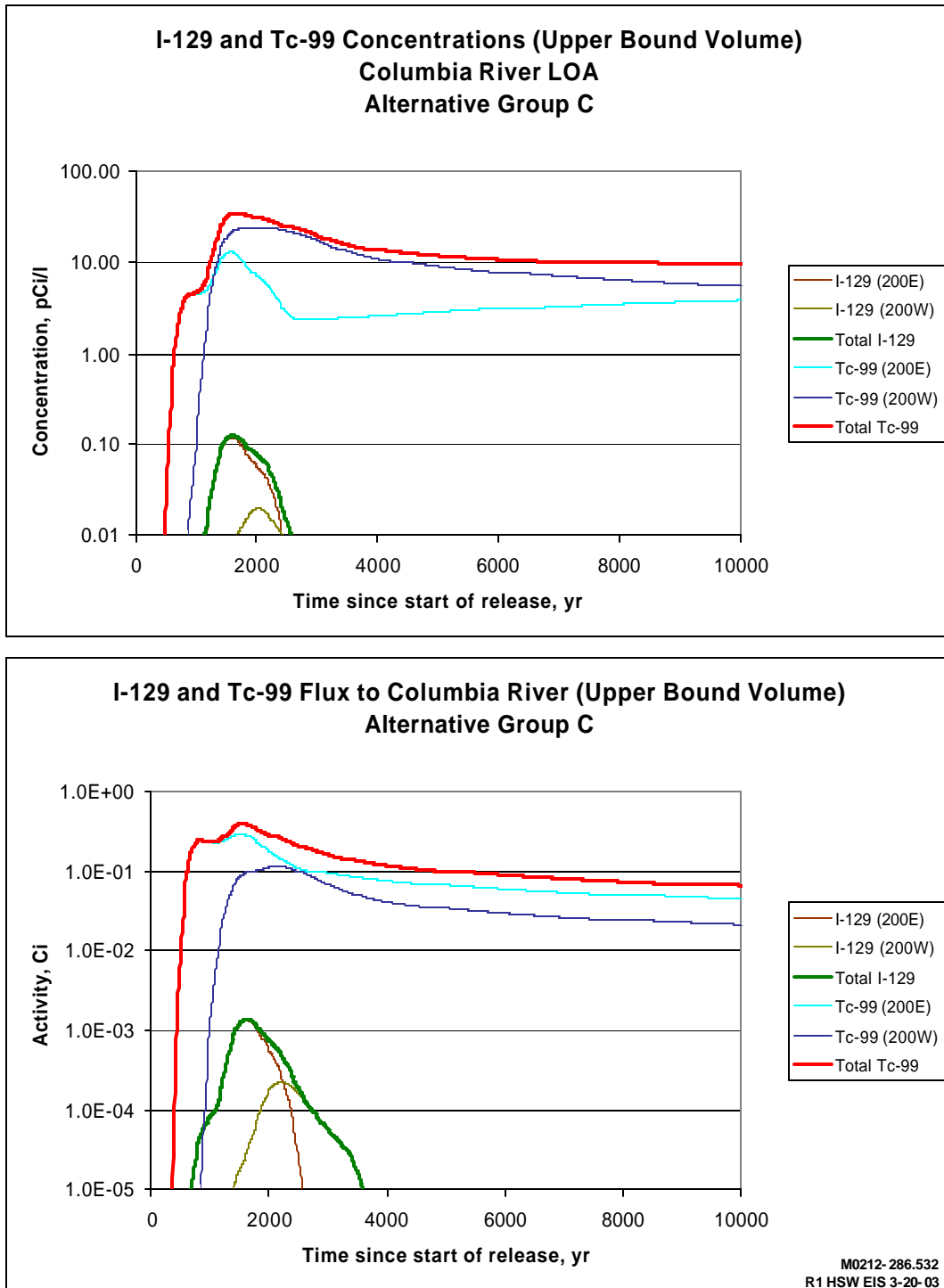


Figure G.39. I-129 and Tc-99 Concentration and River Flux Profiles Along the Columbia River
(Alternative Group C – Upper Bound Volume Wastes Disposed of After 1995)

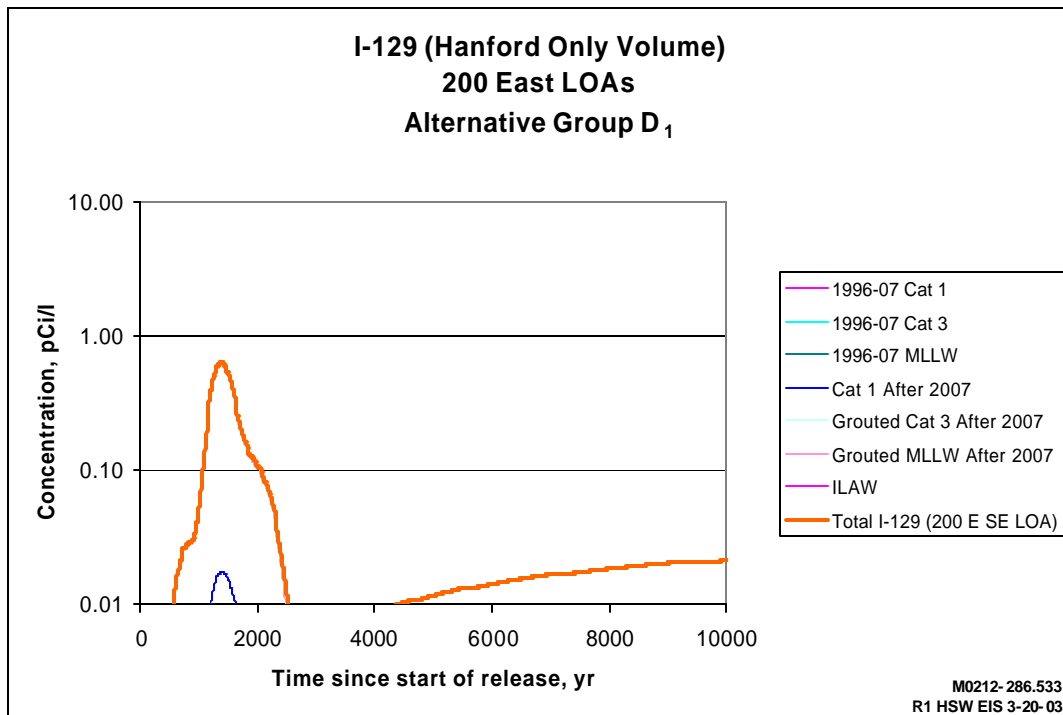
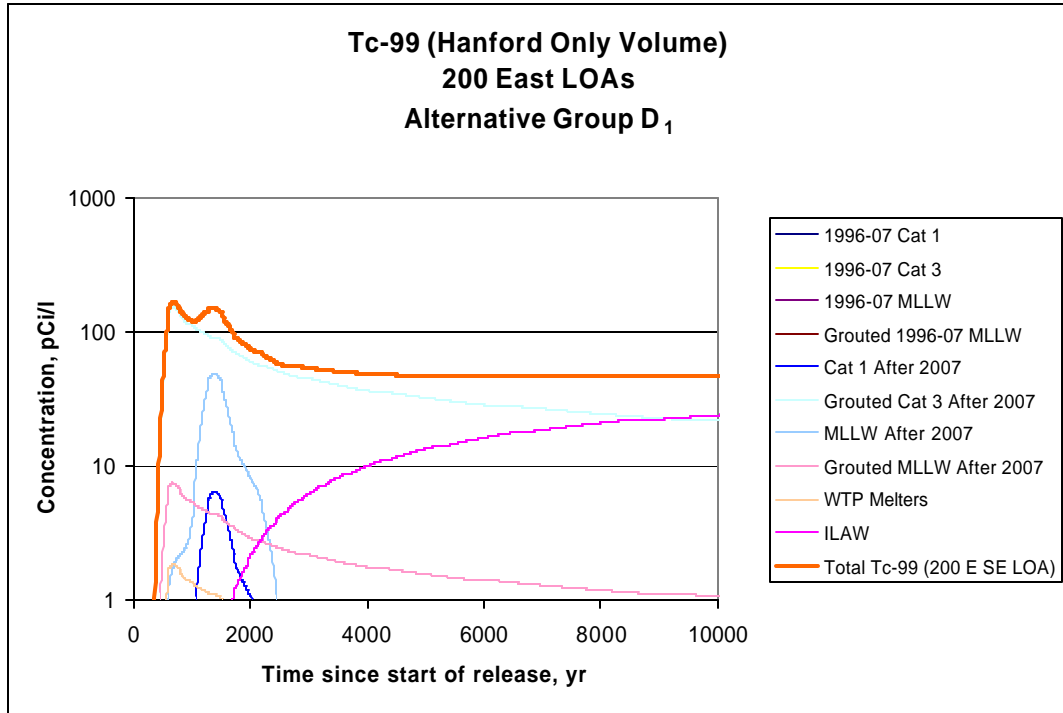


Figure G.40. Tc-99 and I-129 Concentration Profiles at 1-km Line of Analysis (200 East)
(Alternative Group D₁ – Hanford Only Wastes Disposed of After 1995)

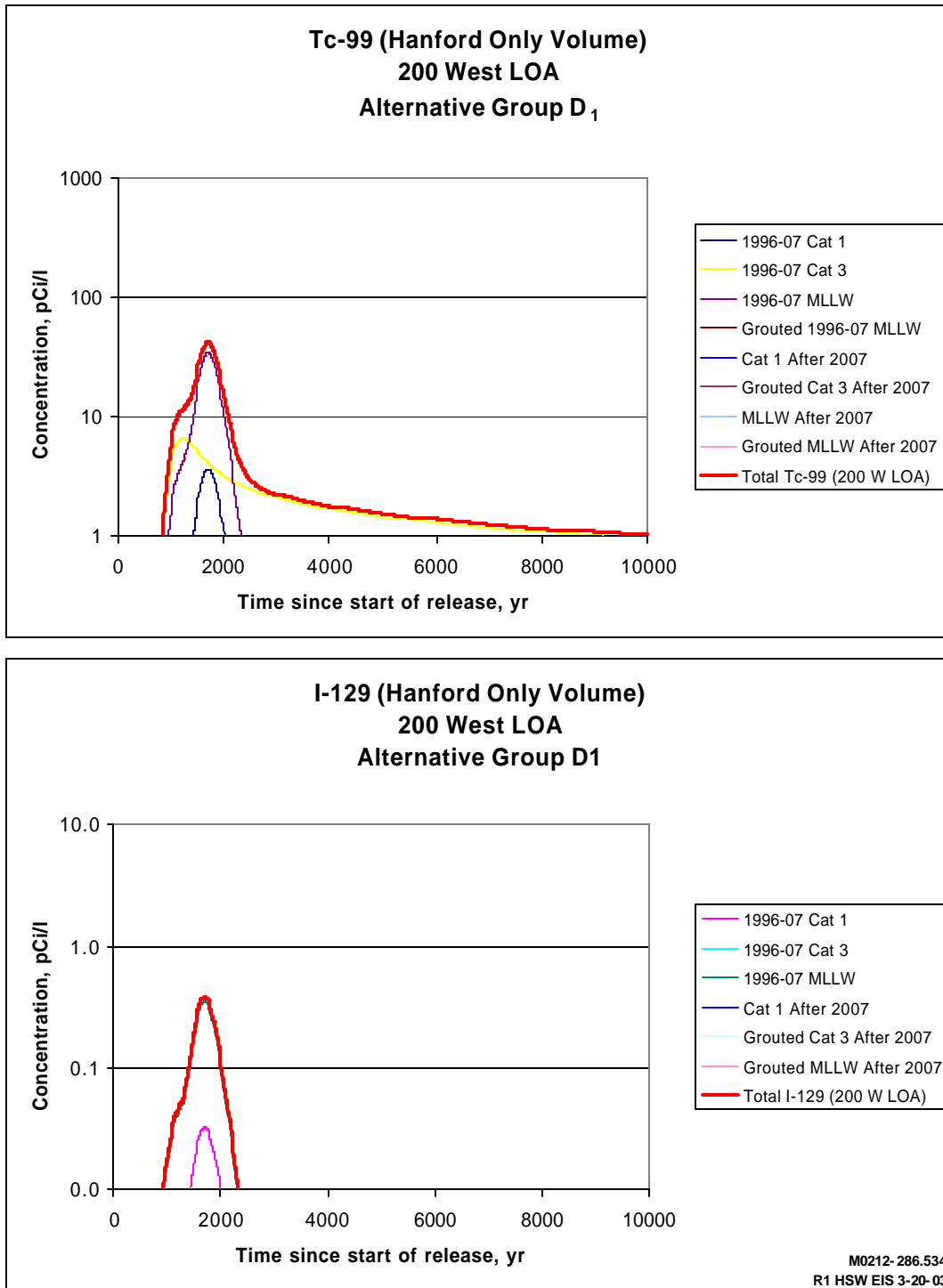


Figure G.41. Tc-99 and I-129 Concentration Profiles at 1-km Line of Analysis (200 West)
(Alternative Group D₁ – Hanford Only Wastes Disposed of After 1995)

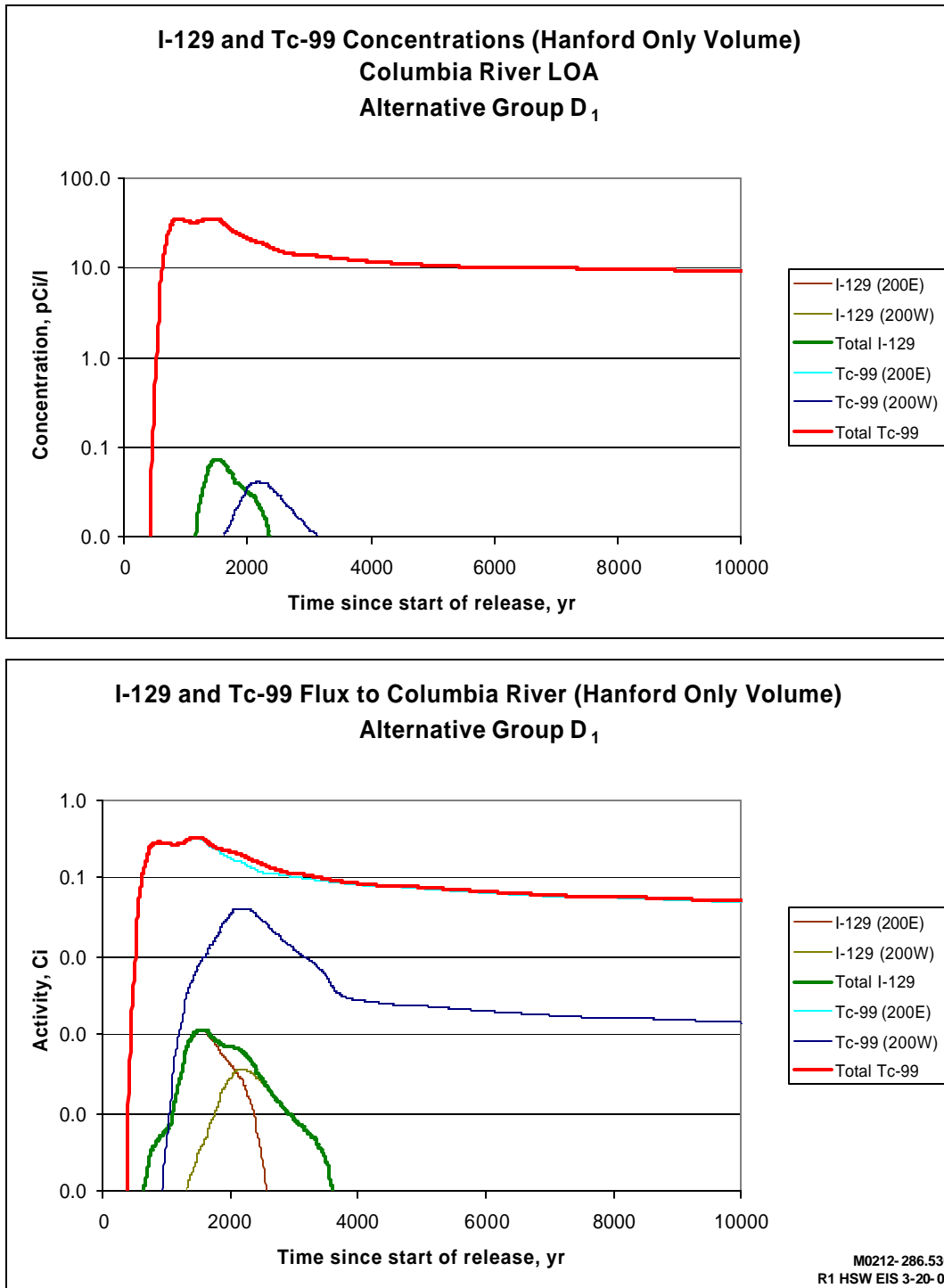


Figure G.42. I-129 and Tc-99 Concentration and River Flux Profiles Along the Columbia River
(Alternative Group D₁ – Hanford Only Wastes Disposed of After 1995)

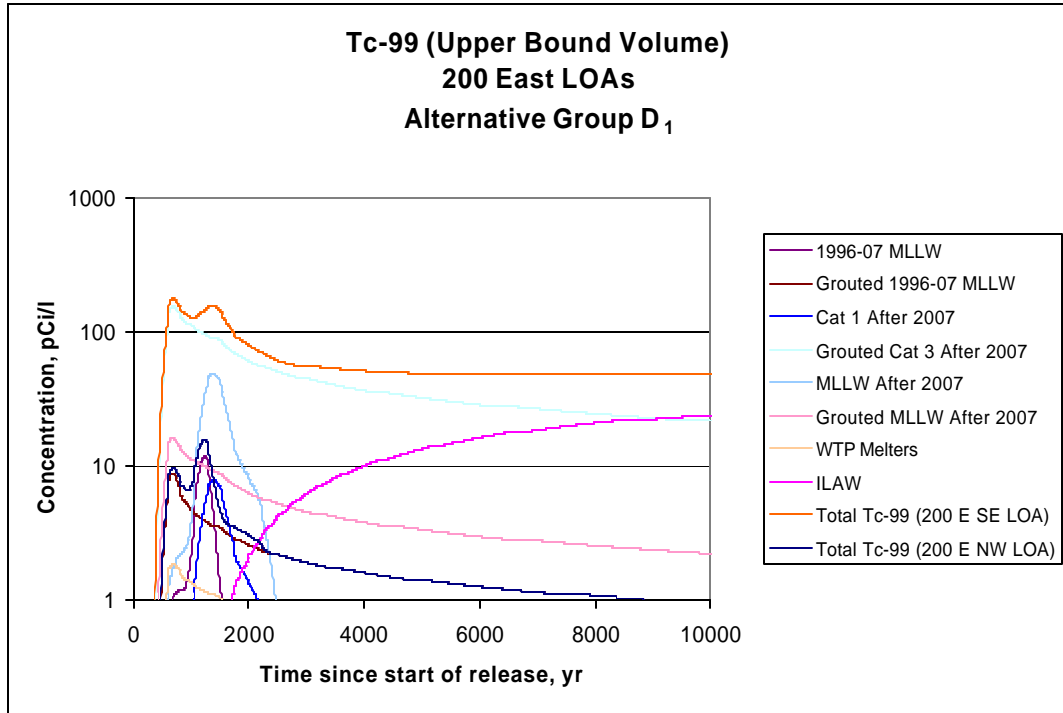


Figure G.43. Tc-99 and I-129 Concentration Profiles at 1-km Line of Analysis (200 East) (Alternative Group D₁ – Upper Bound Volume Wastes Disposed of After 1995)

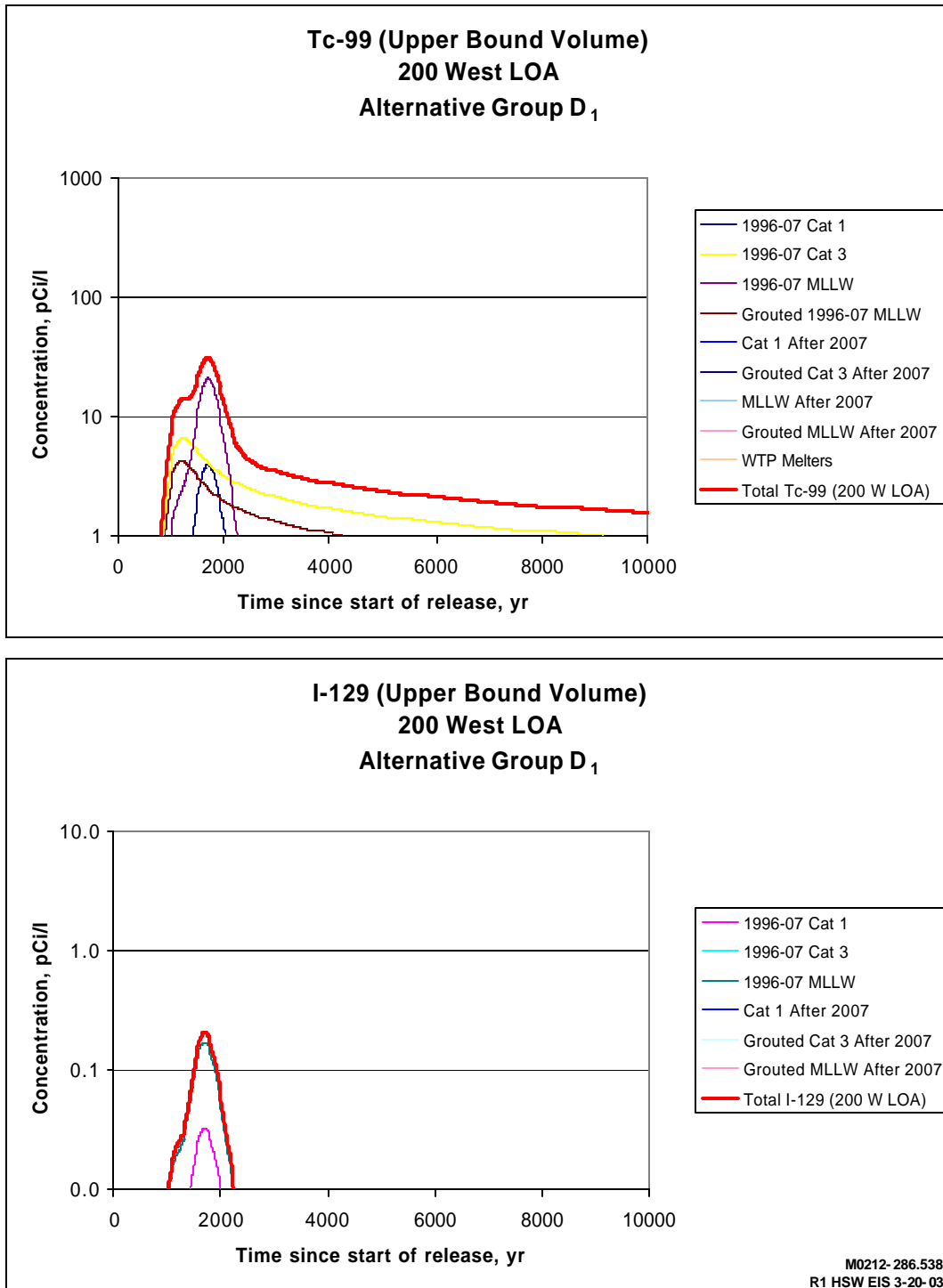


Figure G.44. Tc-99 and I-129 Concentration Profiles at 1-km Line of Analysis (200 West) (Alternative Group D₁ – Upper Bound Volume Wastes Disposed of After 1995)

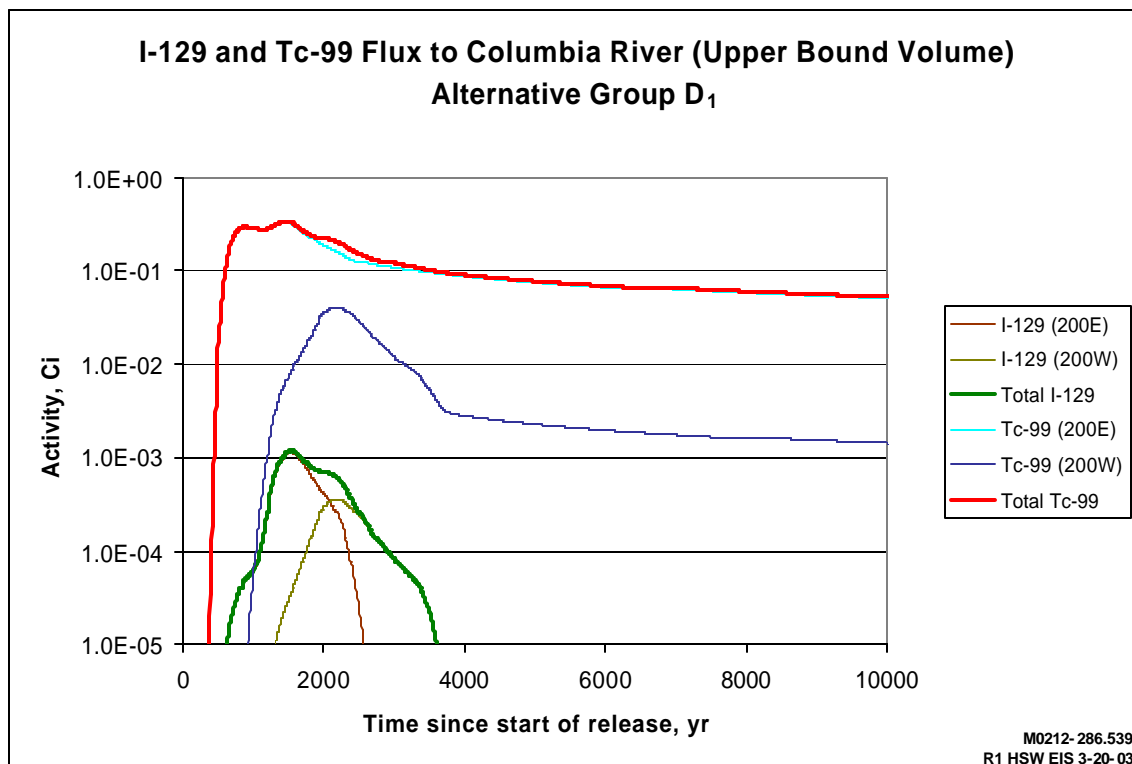
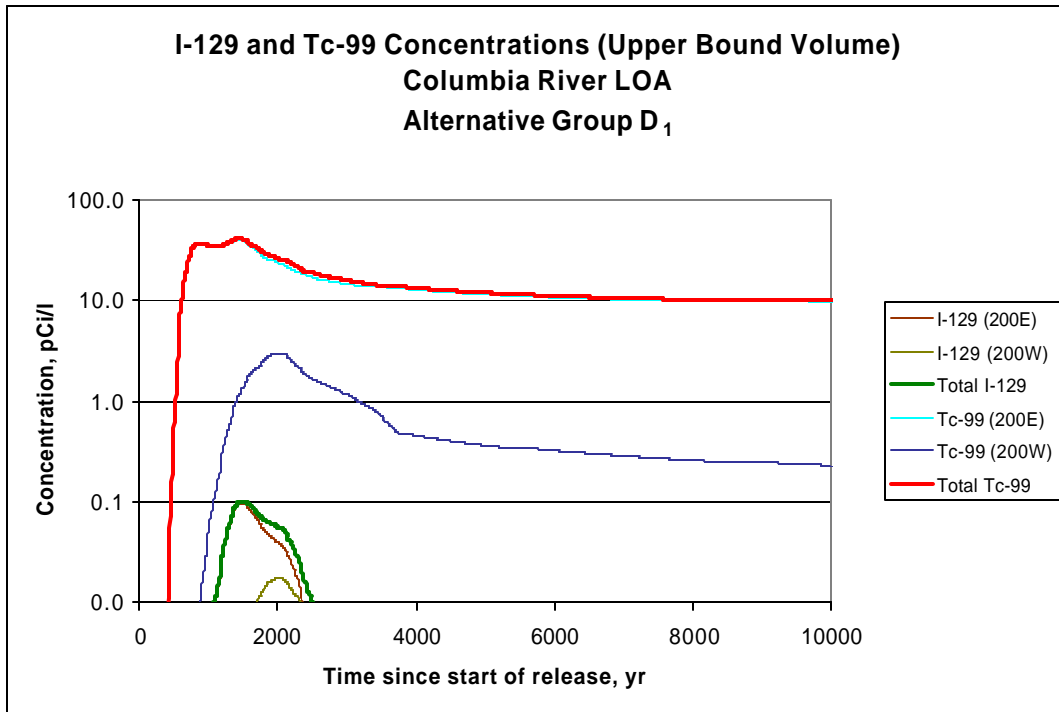


Figure G.45. I-129 and Tc-99 Concentration and River Flux Profiles Along the Columbia River
(Alternative Group D₁ – Upper Bound Volume Wastes Disposed of After 1995)

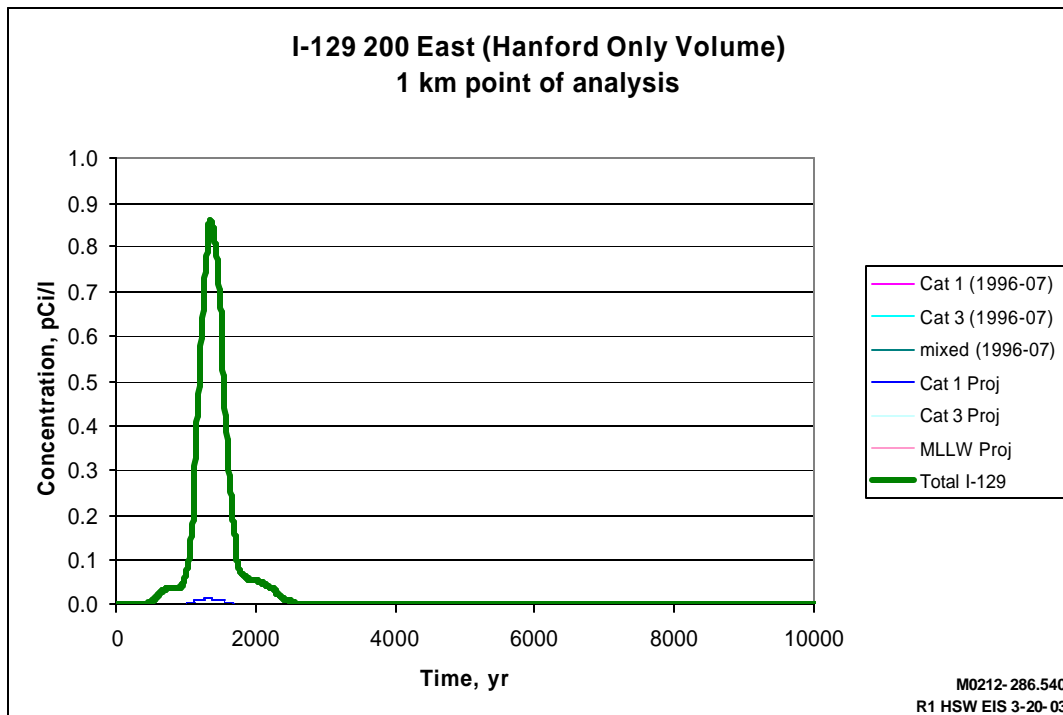
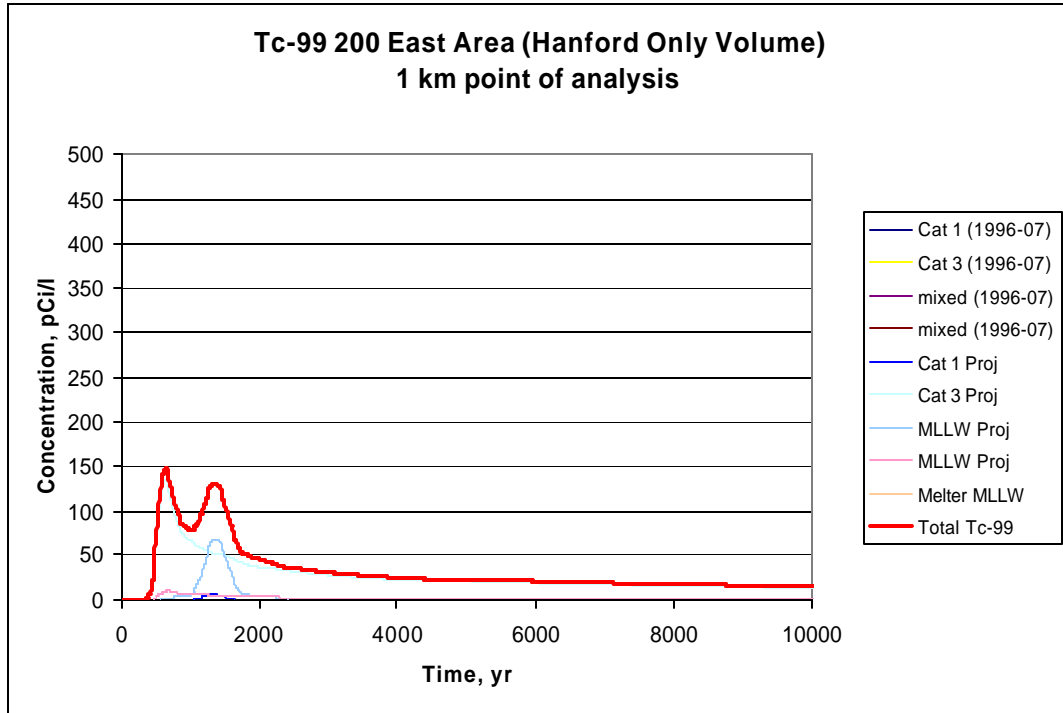


Figure G.46. Tc-99 and I-129 Concentration Profiles at 1-km Line of Analysis (200 East) (Alternative Group D₂ – Hanford Only Wastes Disposed of After 1995)

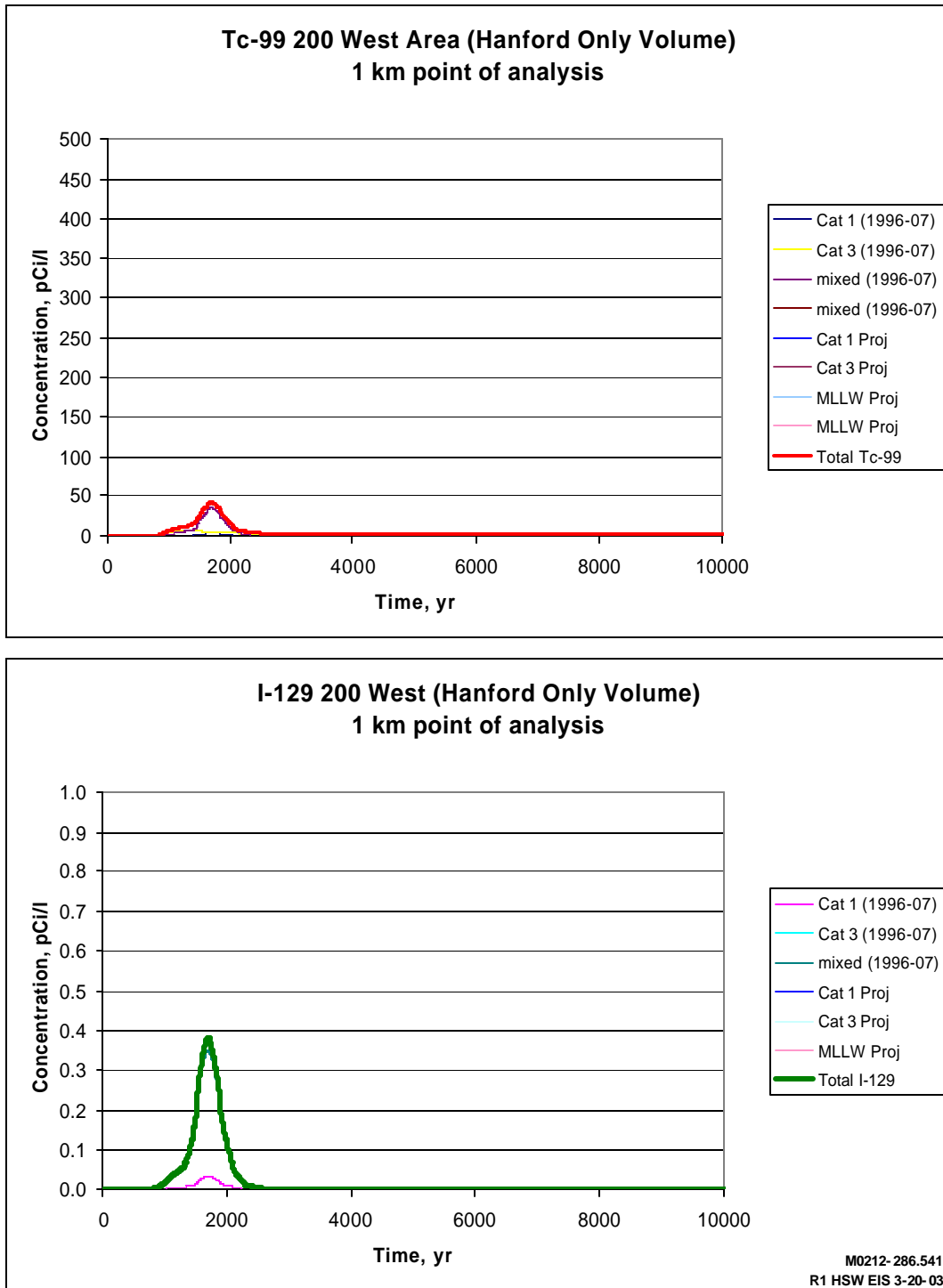


Figure G.47. Tc-99 and I-129 Concentration Profiles at 1-km Line of Analysis (200 West)
(Alternative Group D₂ – Hanford Only Wastes Disposed of After 1995)

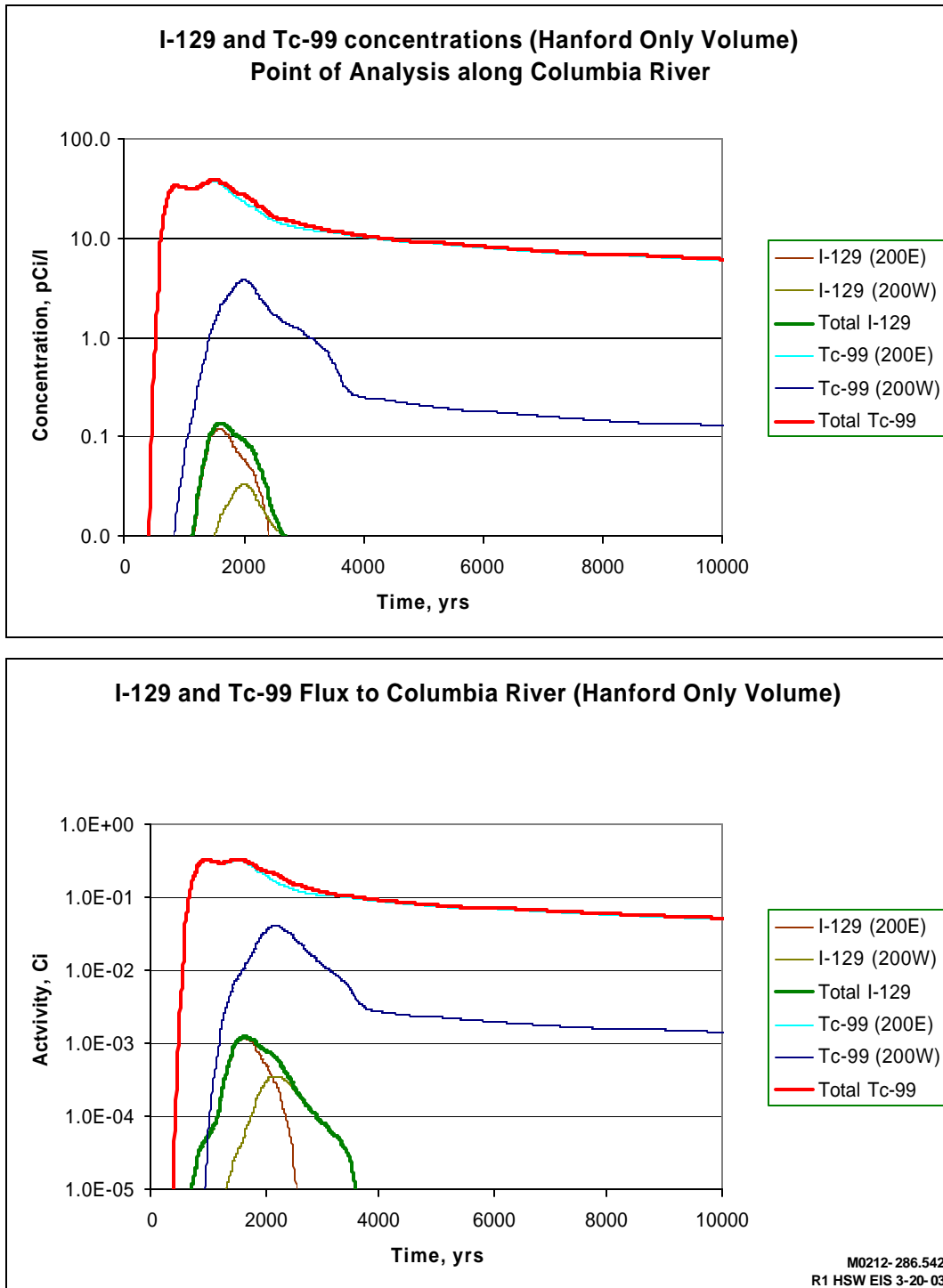


Figure G.48. I-129 and Tc-99 Concentration and River Flux Profiles Along the Columbia River
(Alternative Group D₂ – Hanford Only Wastes Disposed of After 1995)

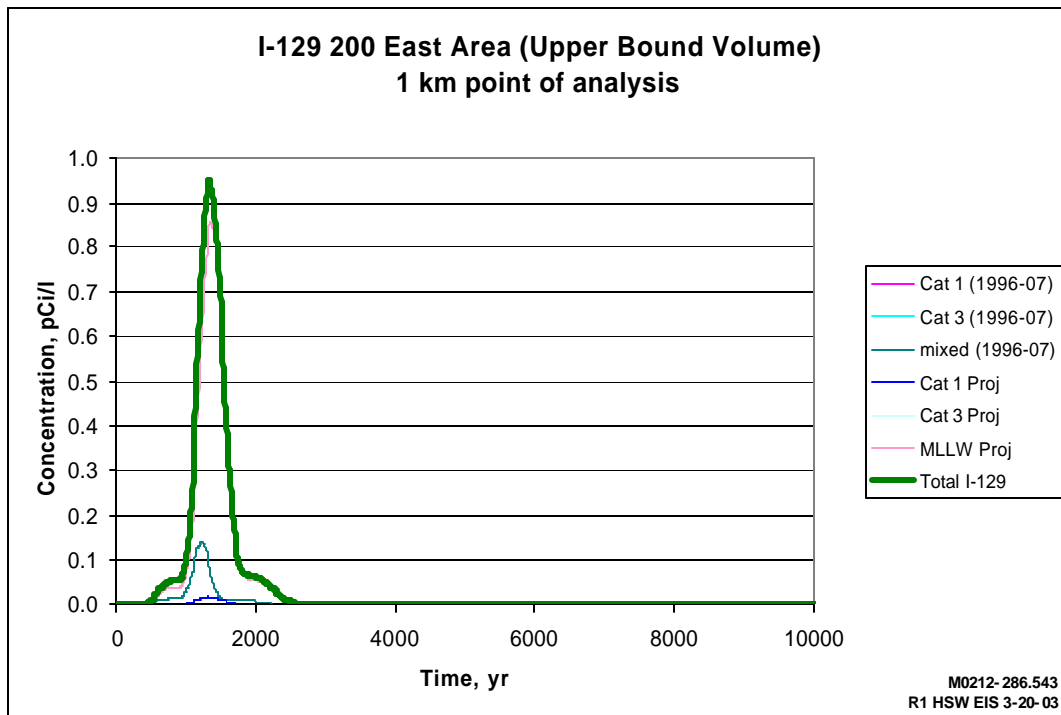
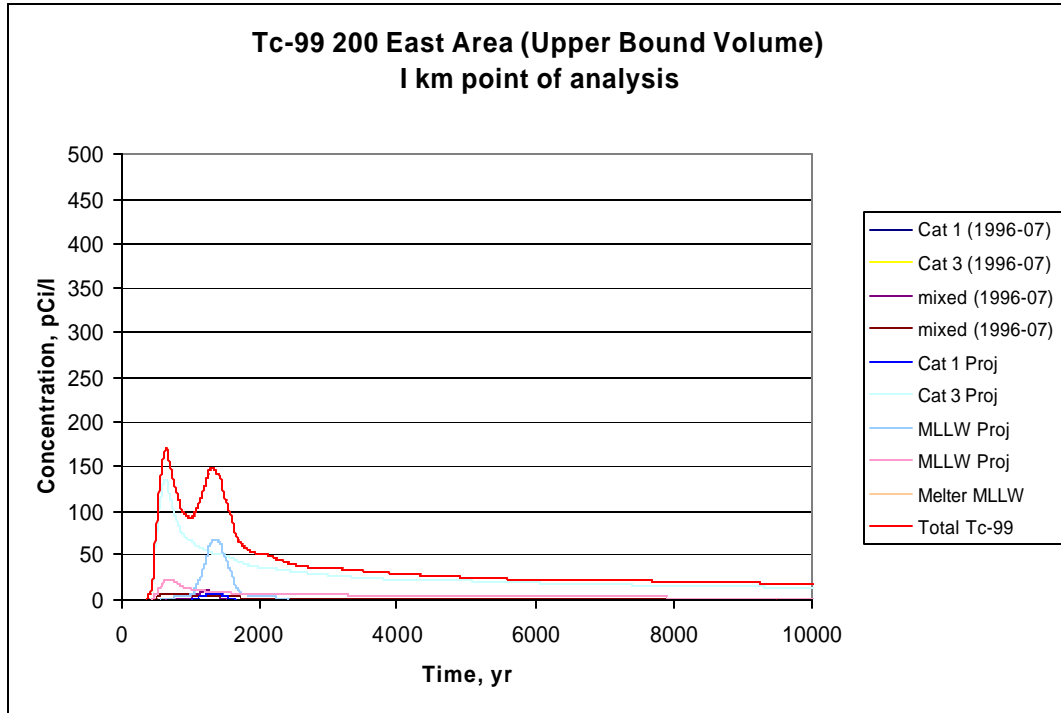


Figure G.49. Tc-99 and I-129 Concentration Profiles at 1-km Line of Analysis (200 East) (Alternative Group D₂ – Upper Bound Volume Wastes Disposed of After 1995)

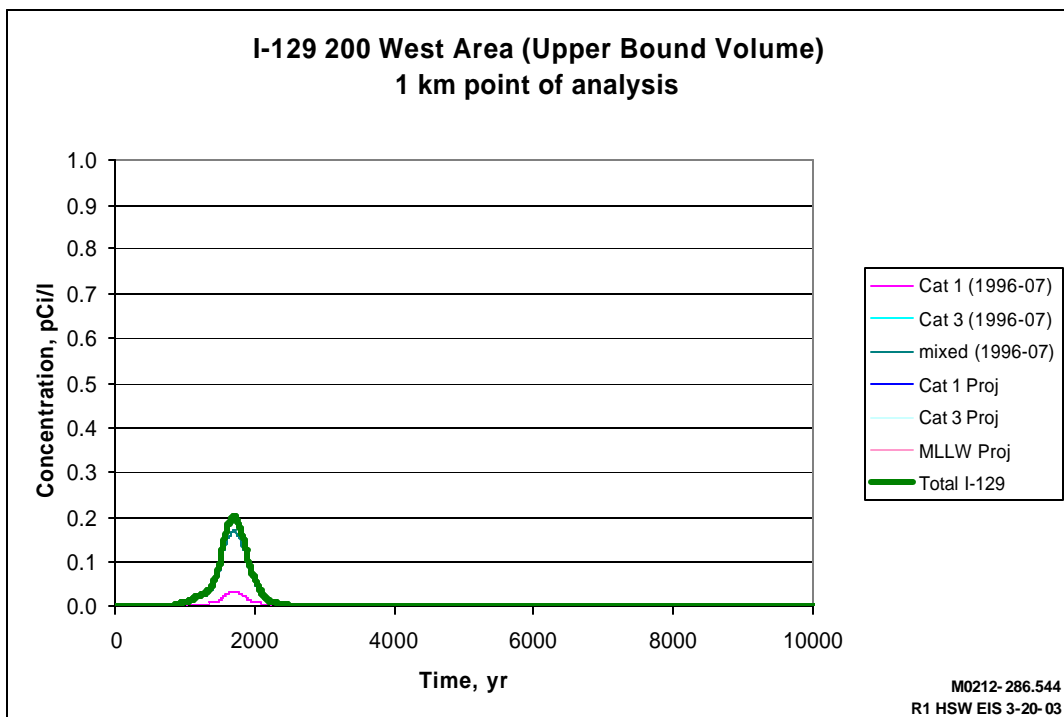
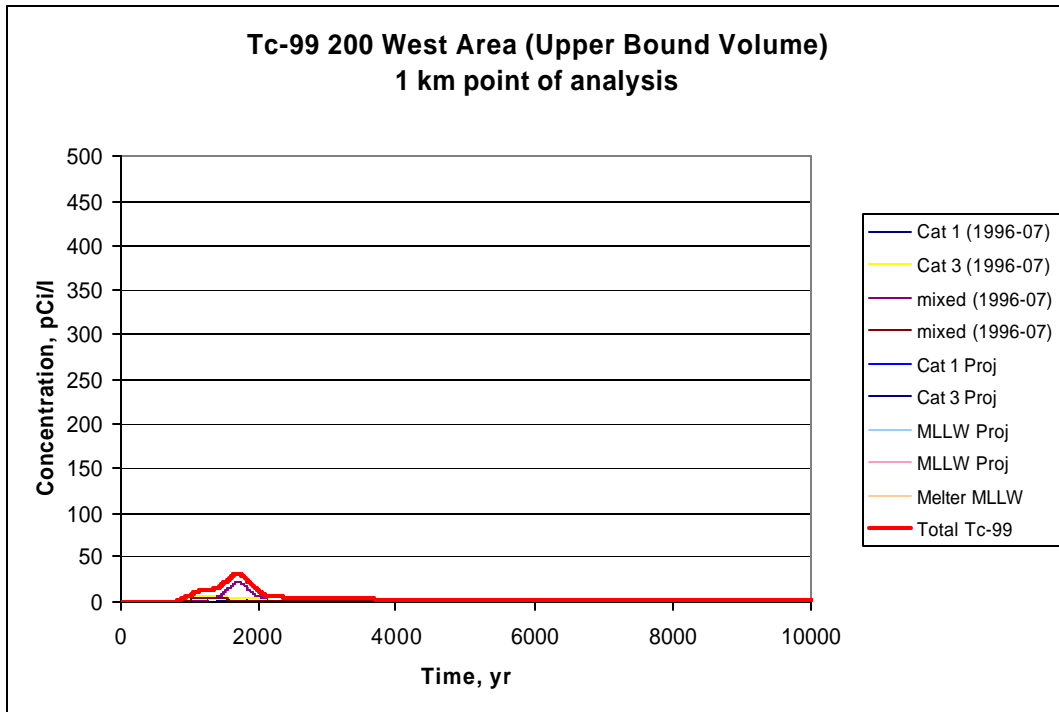


Figure G.50. Tc-99 and I-129 Concentration Profiles at 1-km Line of Analysis (200 West) (Alternative Group D₂ – Upper Bound Volume Wastes Disposed of After 1995)

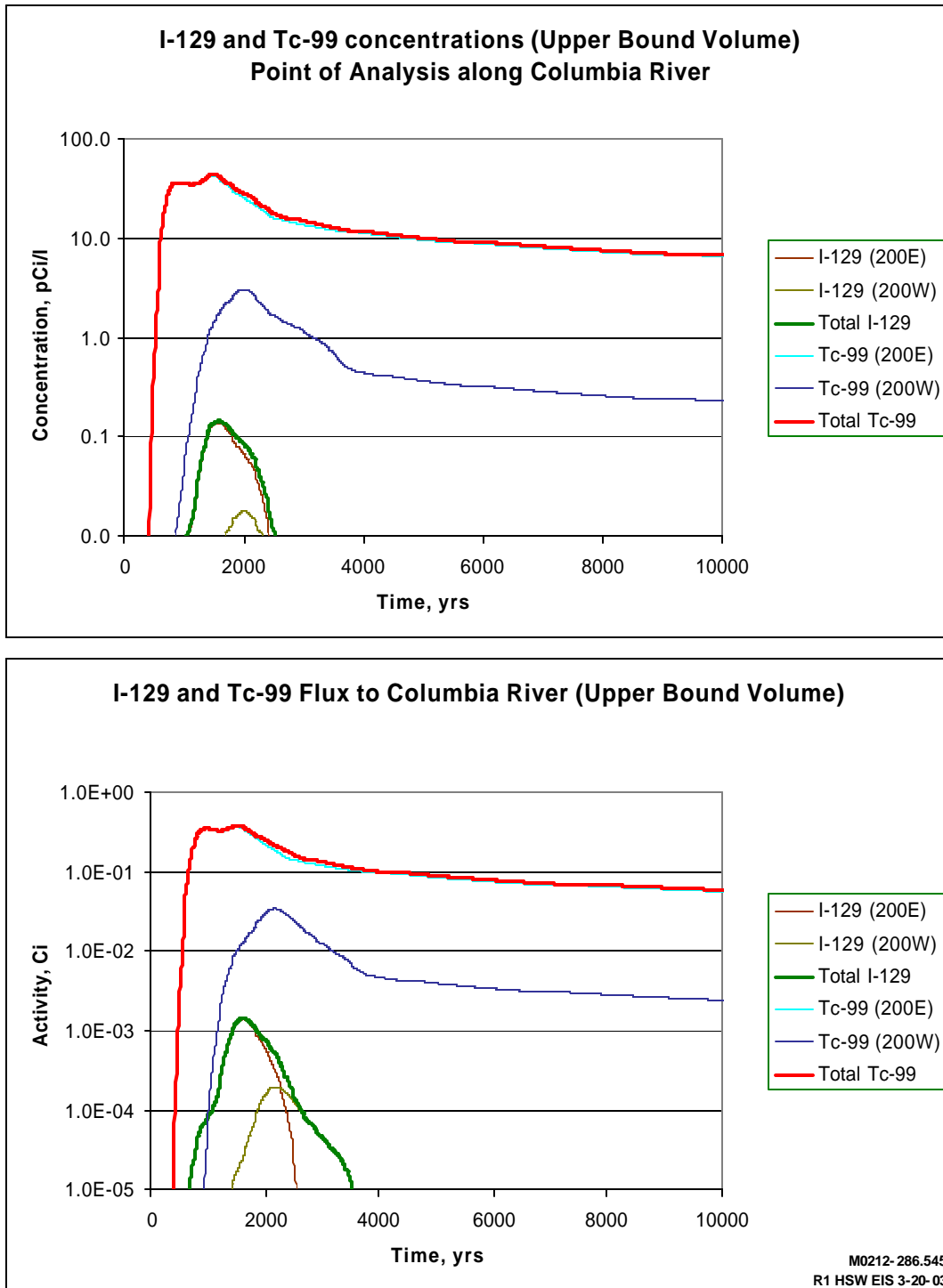


Figure G.51. I-129 and Tc-99 Concentration and River Flux Profiles Along the Columbia River
(Alternative Group D₂ – Upper Bound Volume Wastes Disposed of After 1995)

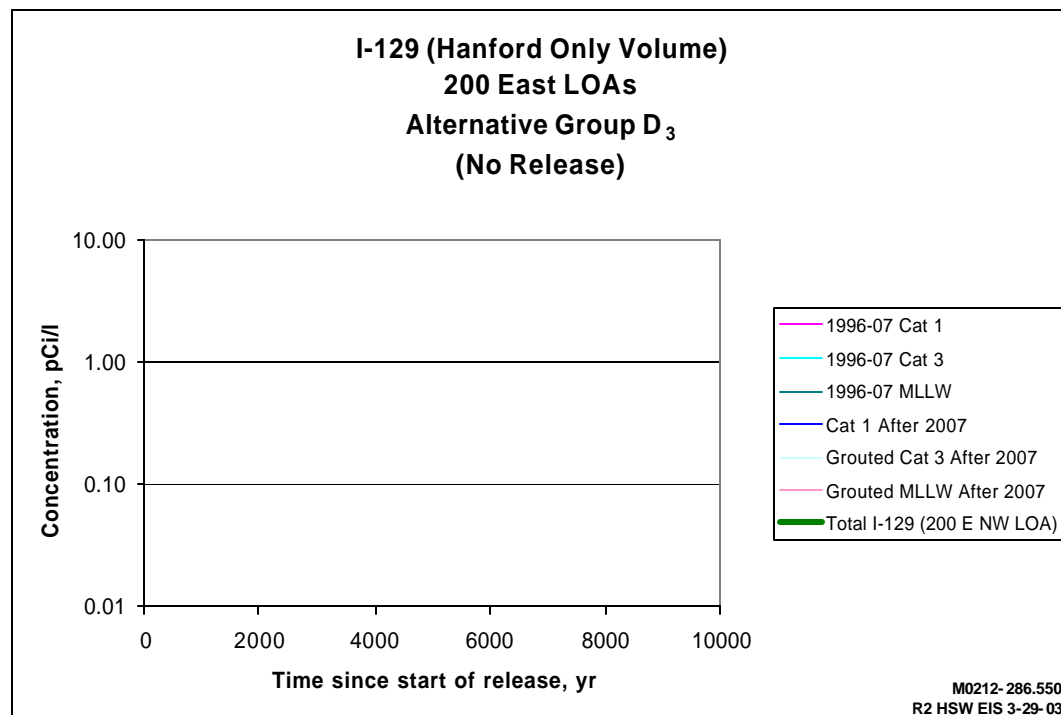
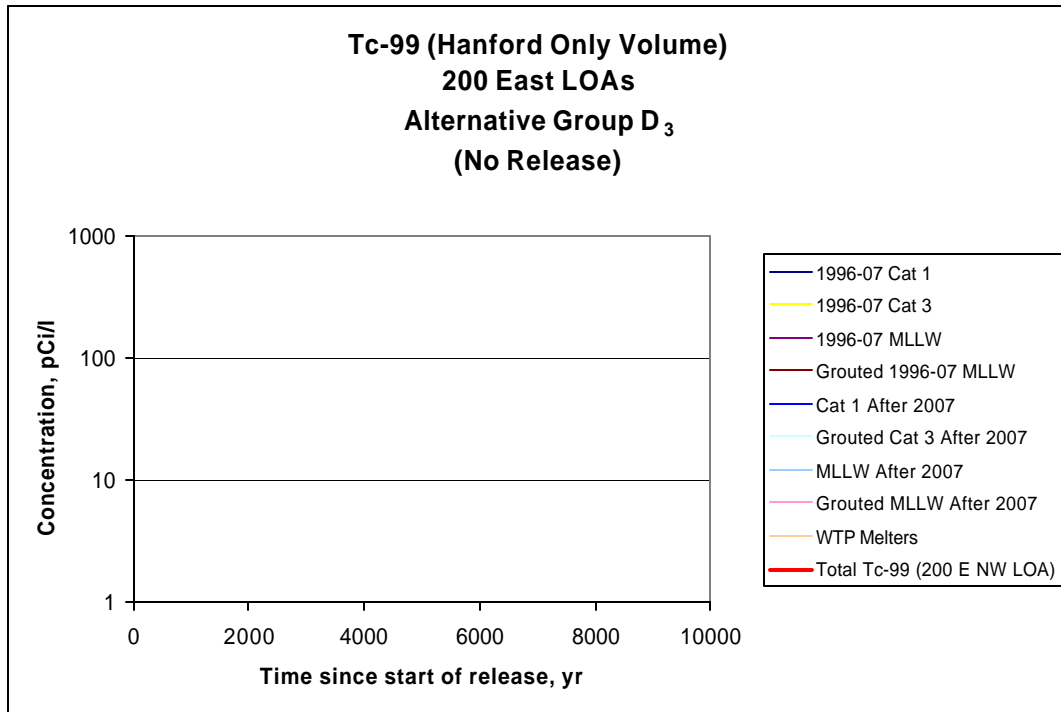


Figure G.52. Tc-99 and I-129 Concentration Profiles at 1-km Line of Analysis (200 East)
(Alternative Group D₃ – Hanford Only Wastes Disposed of After 1995)

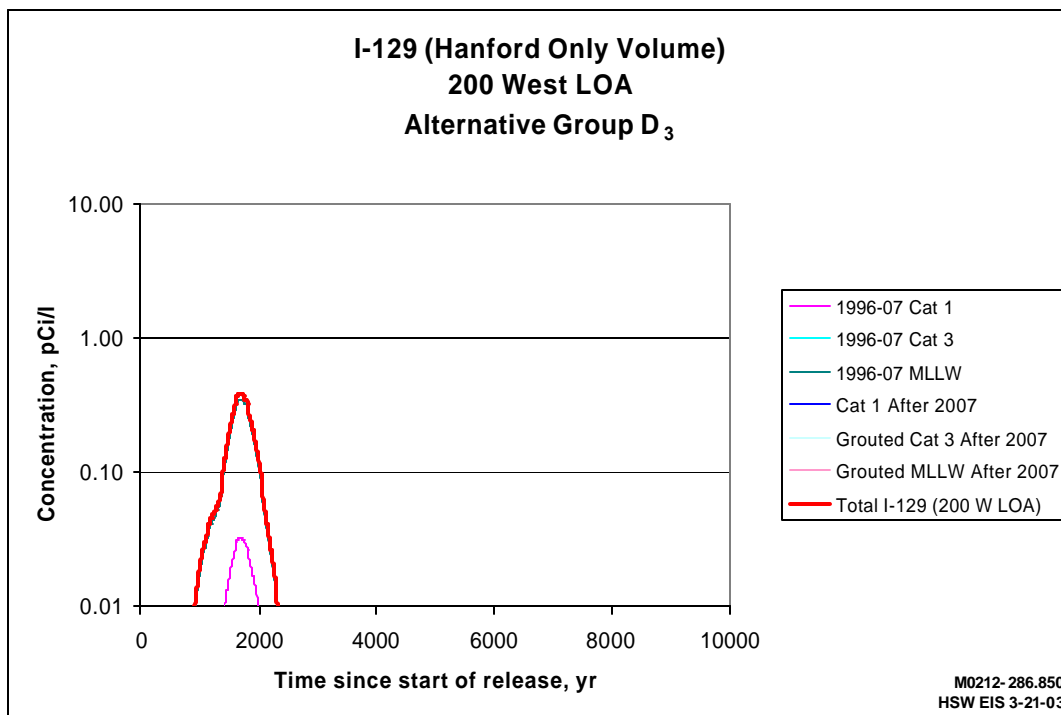
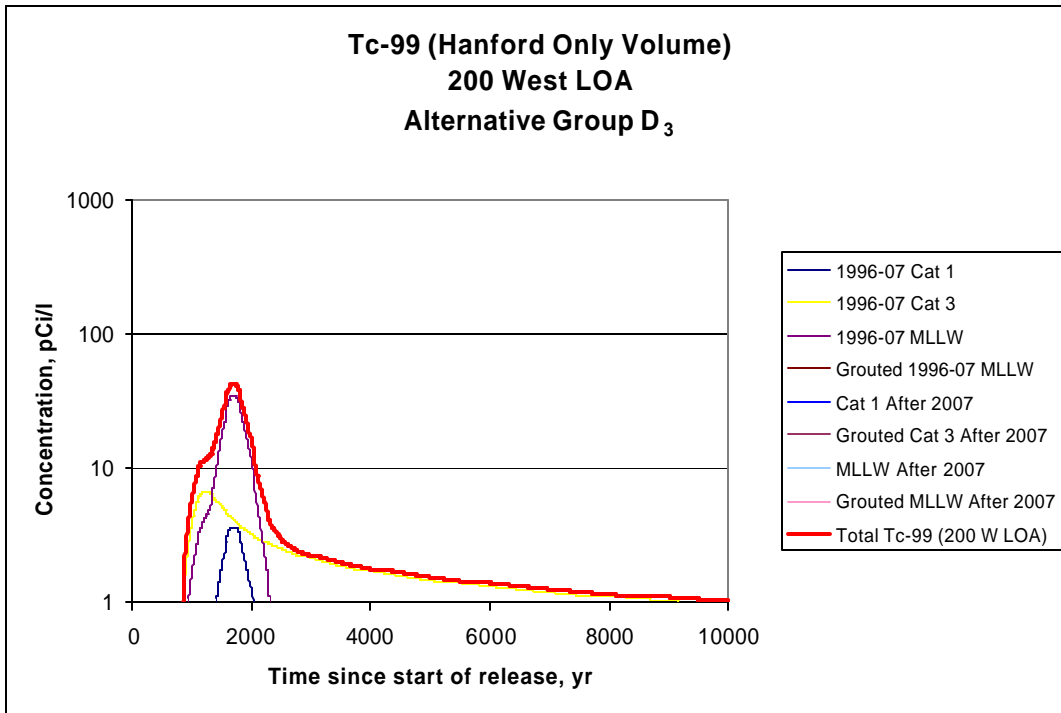


Figure G.53. Tc-99 and I-129 Concentration Profiles at 1-km Line of Analysis (200 West)
(Alternative Group D₃ – Hanford Only Wastes Disposed of After 1995)

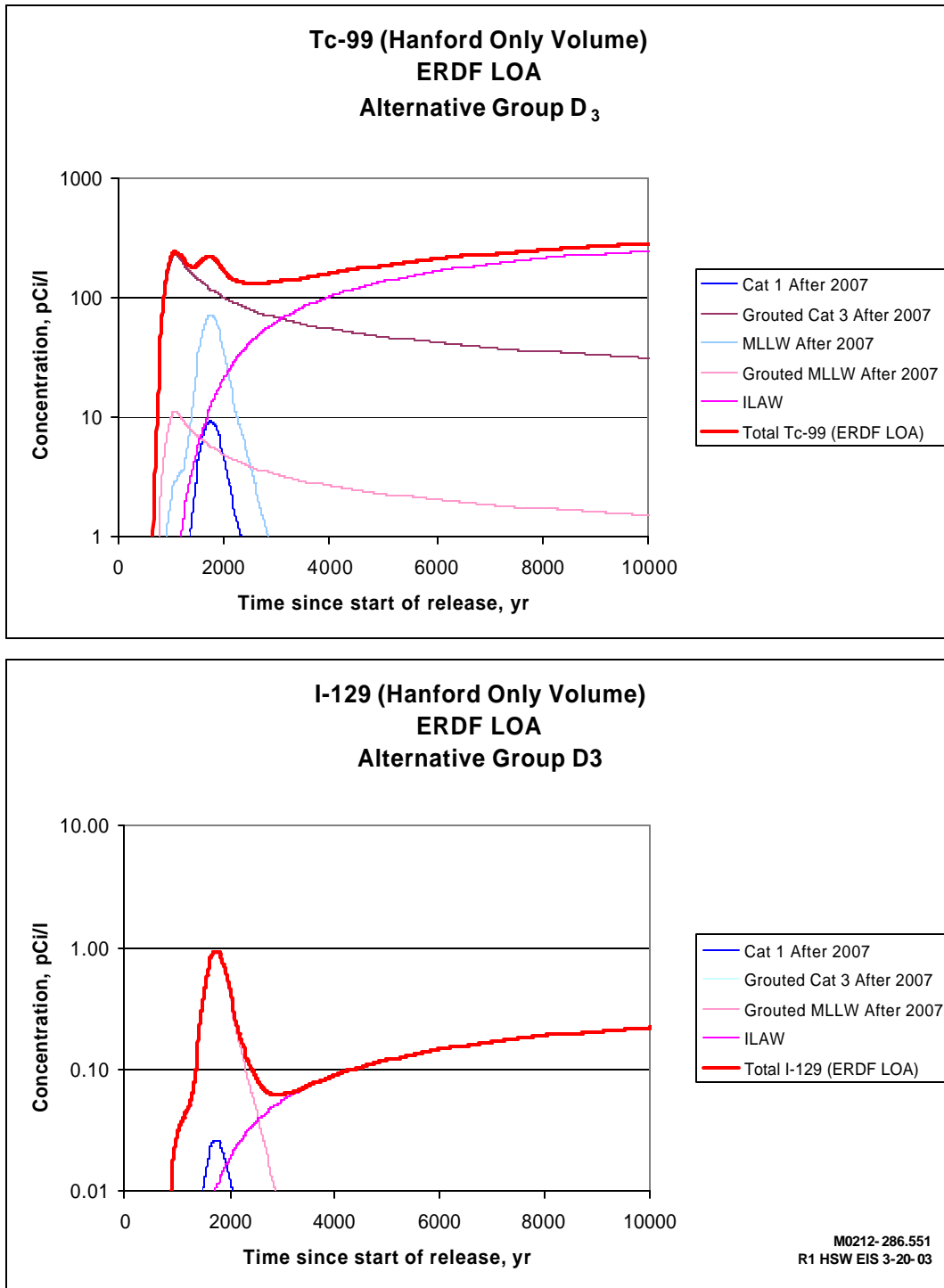


Figure G.54. Tc-99 and I-129 Concentration Profiles at the ERDF LOA (Alternative Group D₃ – Hanford Only Wastes Disposed of After 1995)

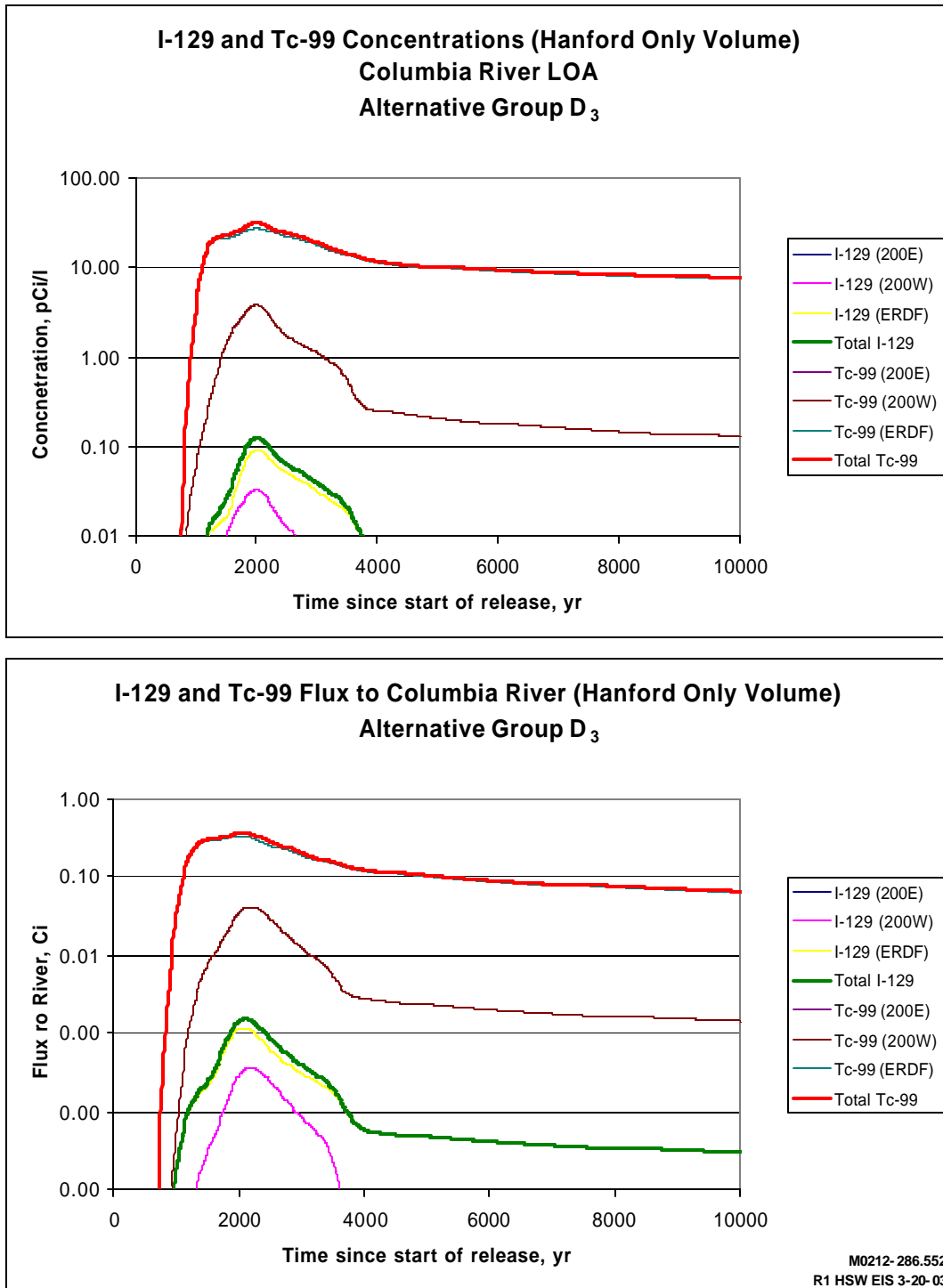


Figure G.55. I-129 and Tc-99 Concentration and River Flux Profiles Along the Columbia River LOA
(Alternative Group D₃ – Hanford Only Wastes Disposed of After 1995)

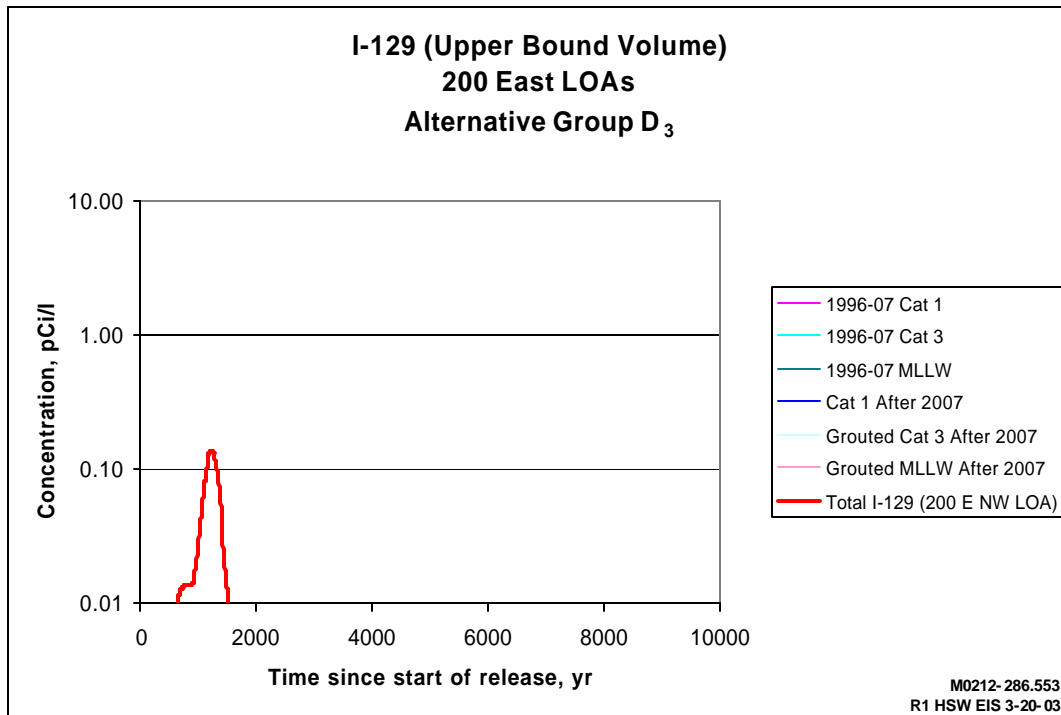
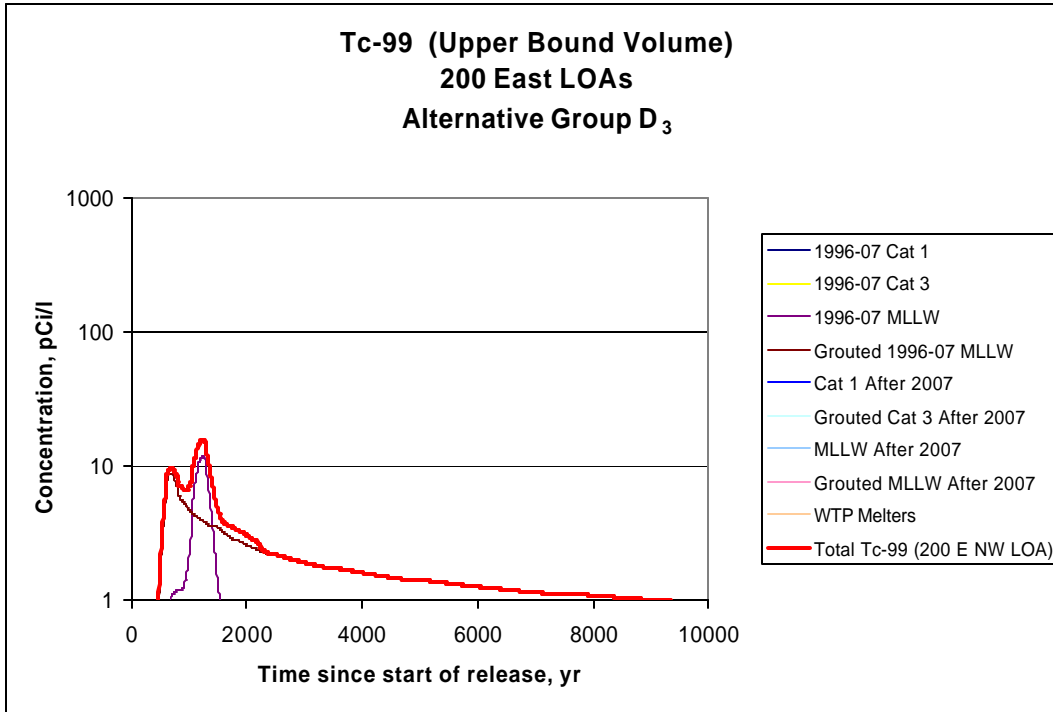


Figure G.56. Tc-99 and I-129 Concentration Profiles at the 200 East LOAs (Alternative Group D₃ – Upper Bound Volume Wastes Disposed of After 1995)

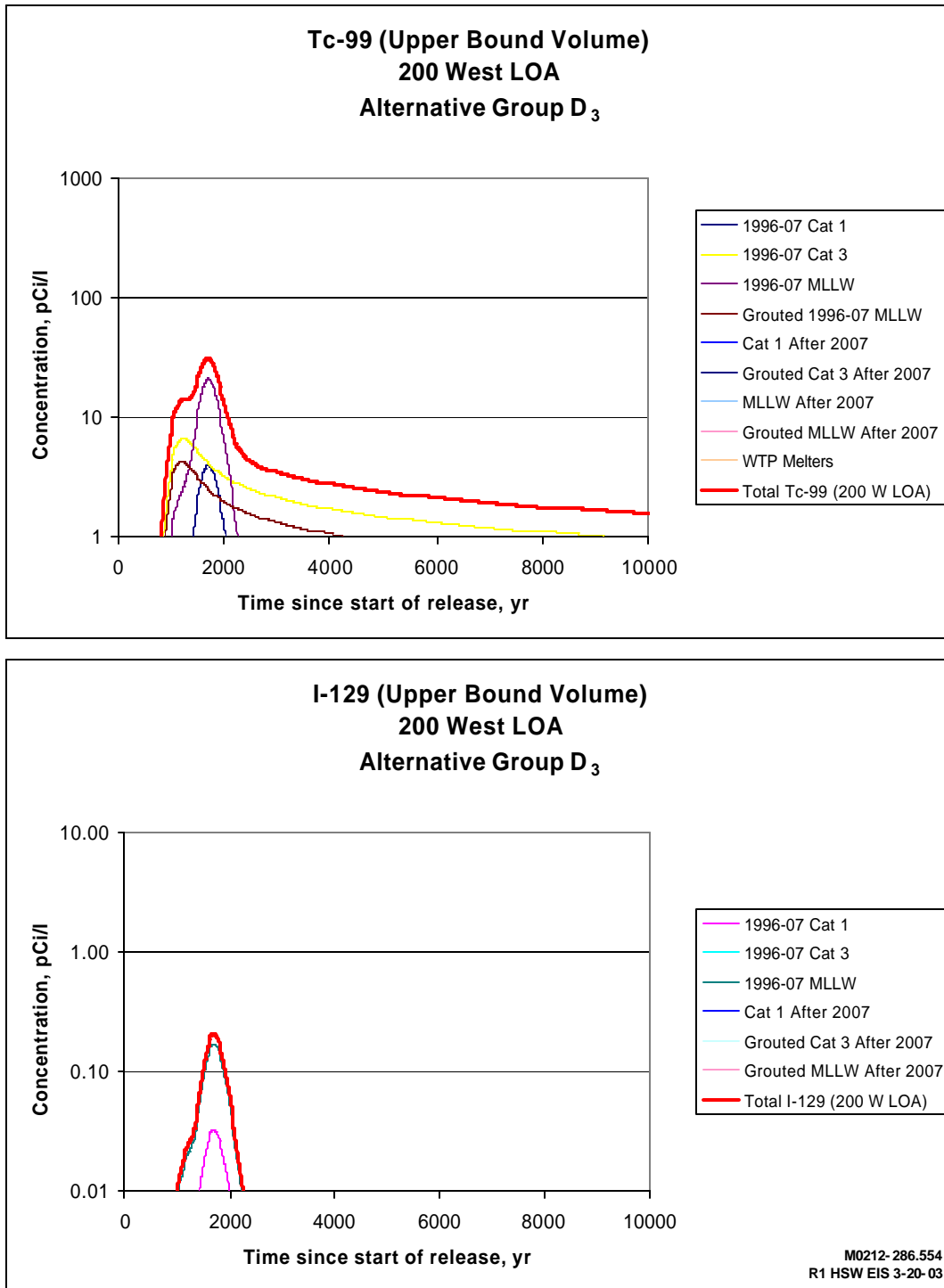


Figure G.57. Tc-99 and I-129 Concentration Profiles at the 200 West LOA (Alternative Group D₃ – Upper Bound Volume Wastes Disposed of After 1995)

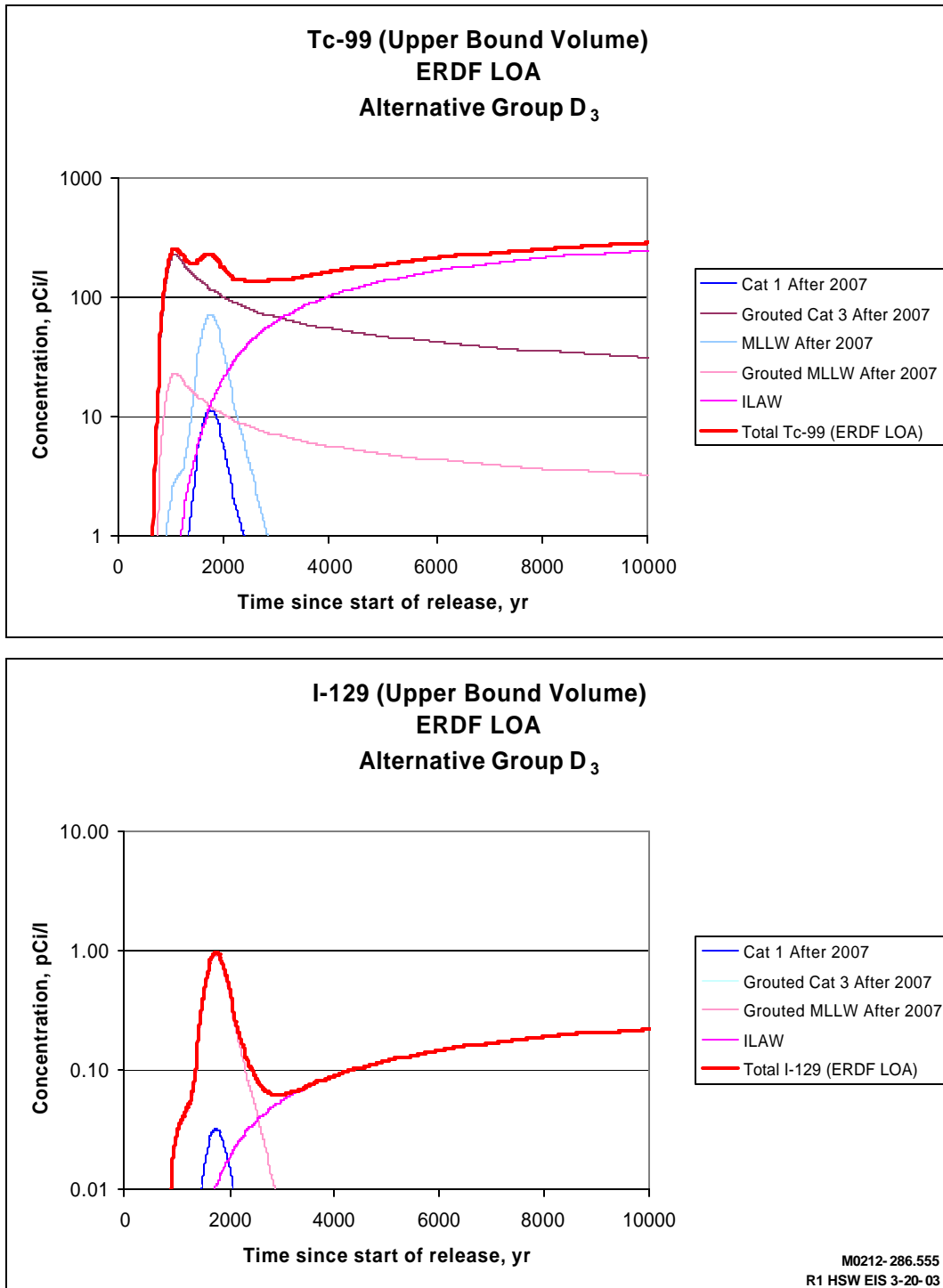
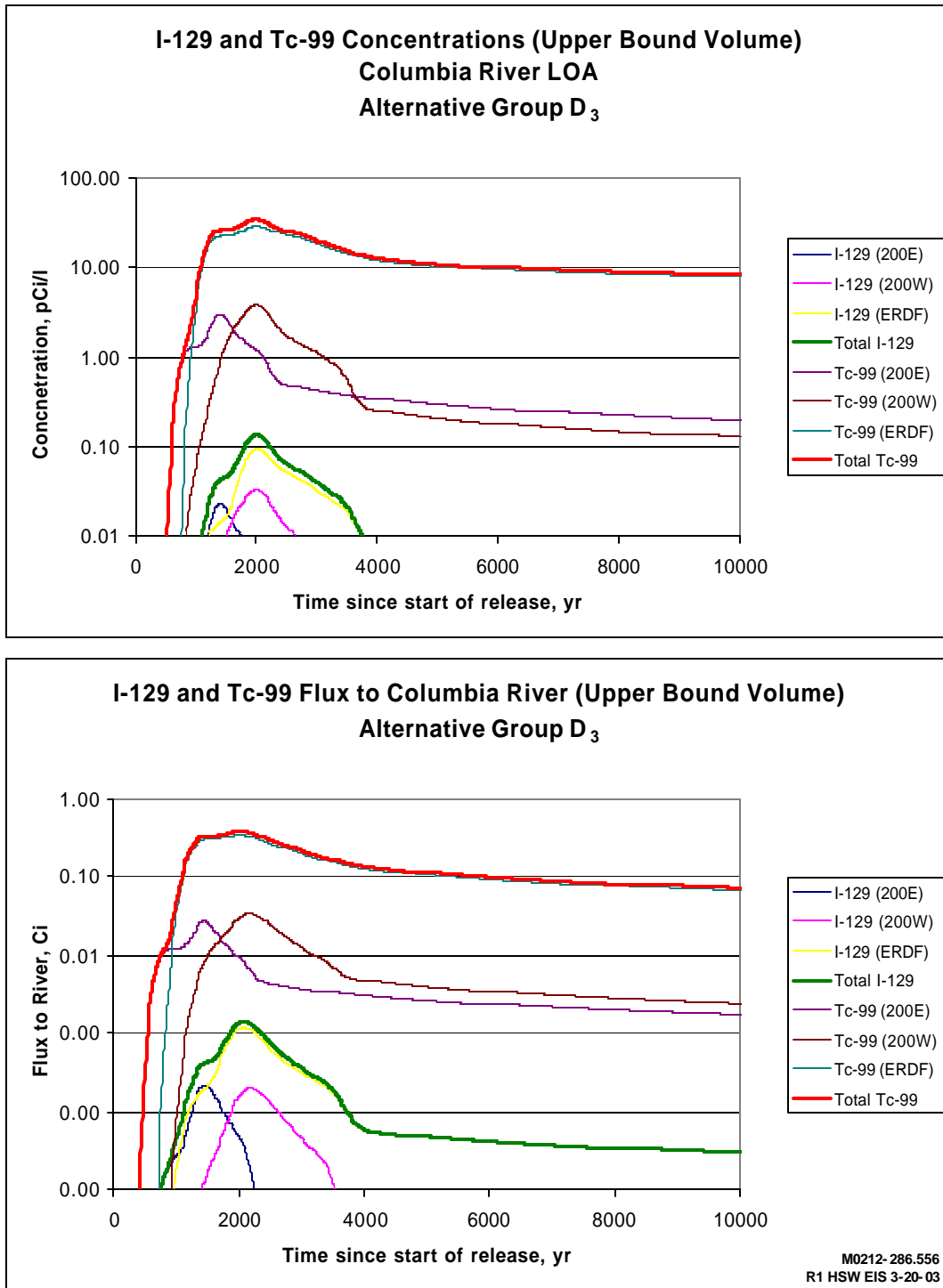


Figure G.58. Tc-99 and I-129 Concentration Profiles at the ERDF LOA (Alternative Group D₃ – Upper Bound Volume Wastes Disposed of After 1995)



1
2 **Figure G.59.** I-129 and Tc-99 Concentration and River Flux Profiles Along the Columbia River LOA
3 (Alternative Group D₃ – Upper Bound Volume Wastes Disposed of After 1995)
4

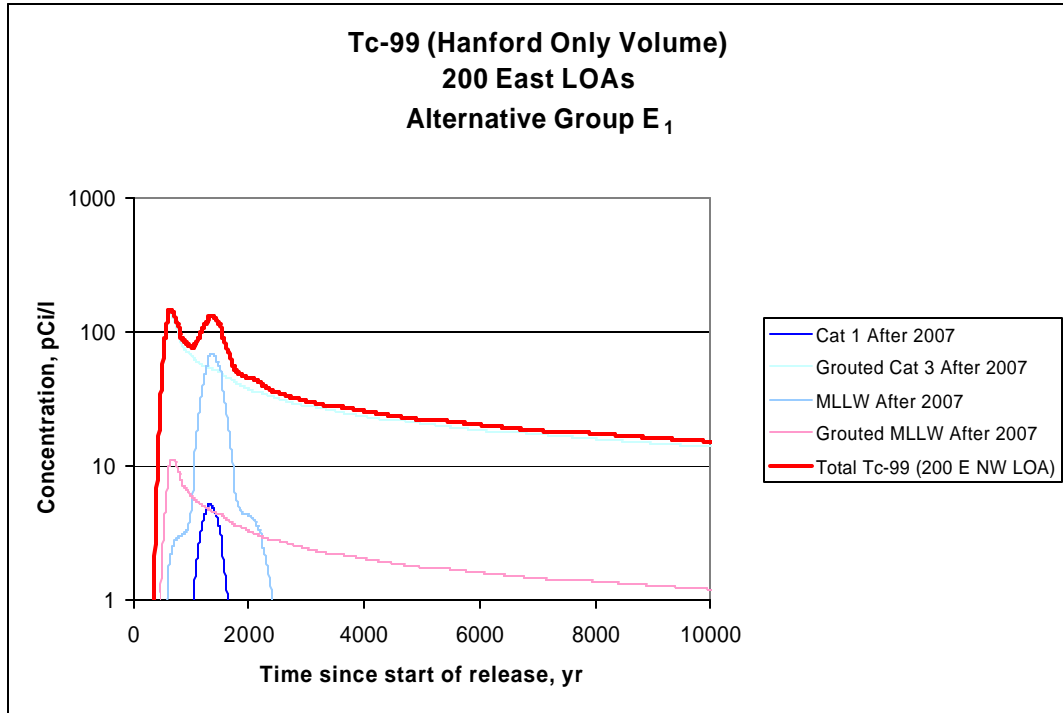


Figure G.60. Tc-99 and I-129 Concentration Profiles at the 200 East LOAs (Alternative Group E₁ – Hanford Only Wastes Disposed of After 1995)

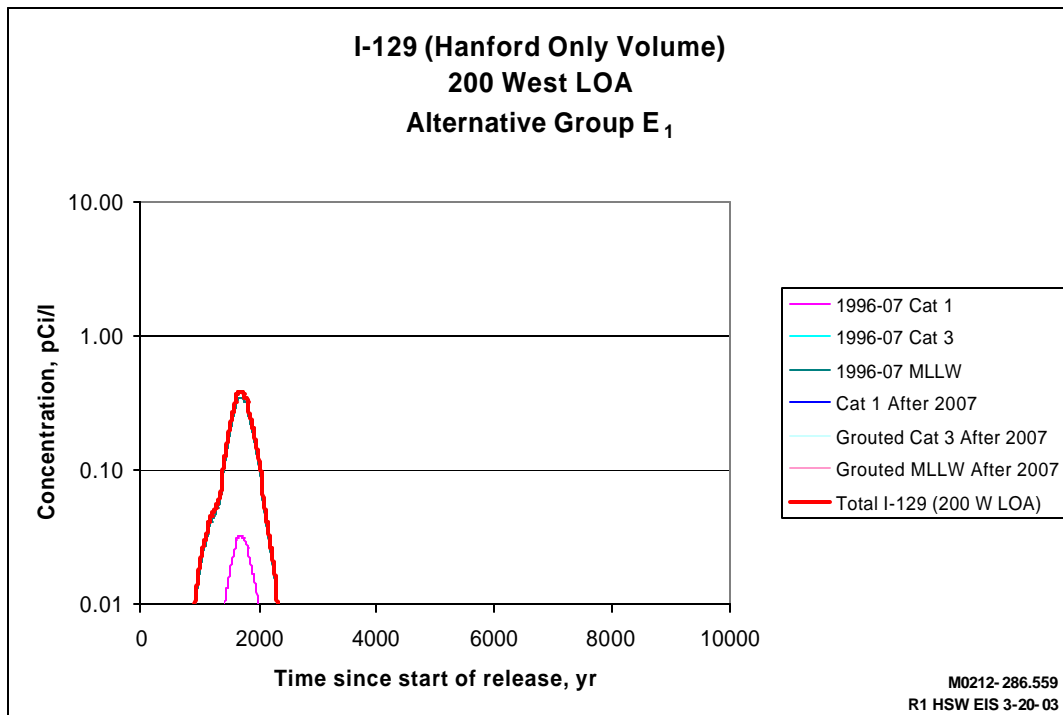
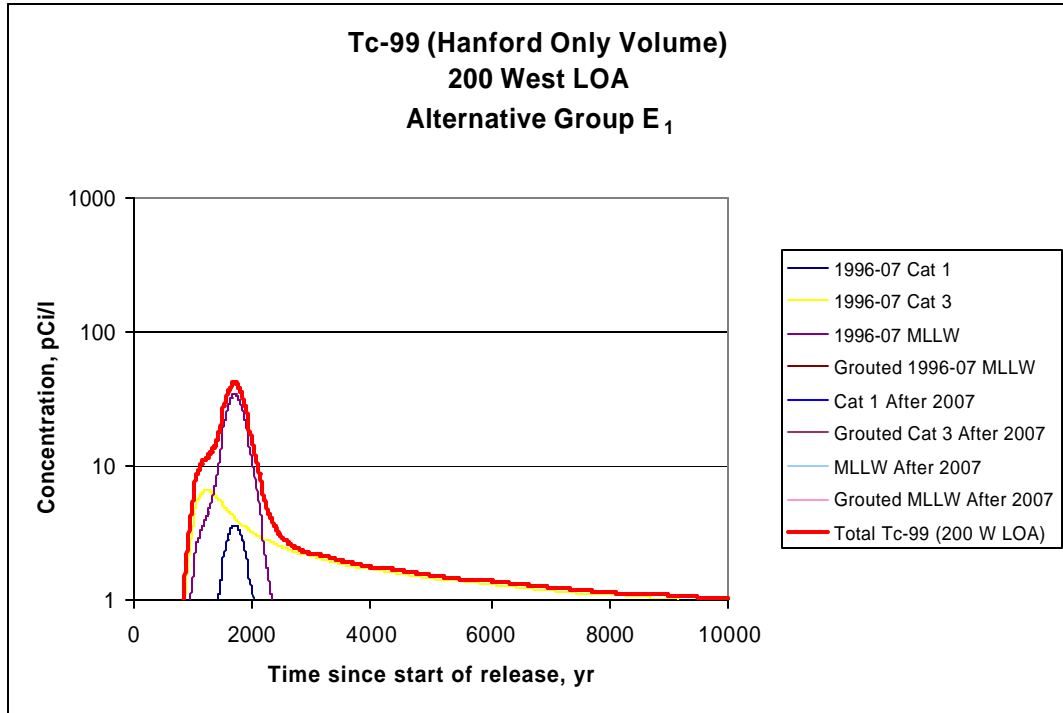


Figure G.61. Tc-99 and I-129 Concentration Profiles at the 200 West LOA (Alternative Group E₁ – Hanford Only Wastes Disposed of After 1995)

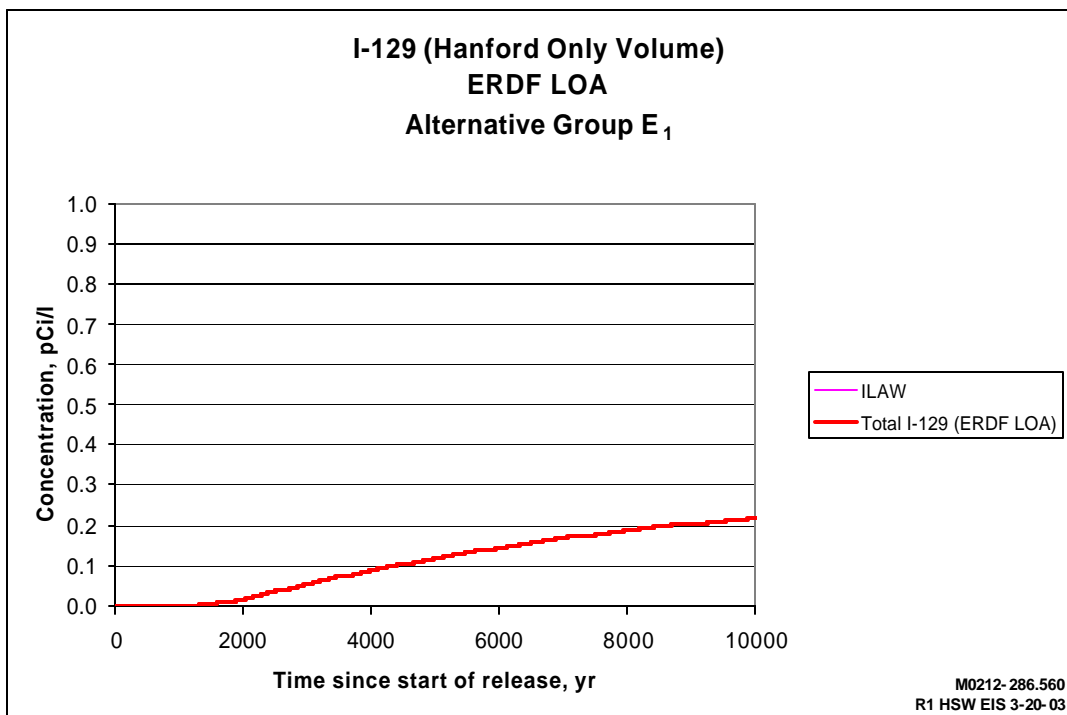
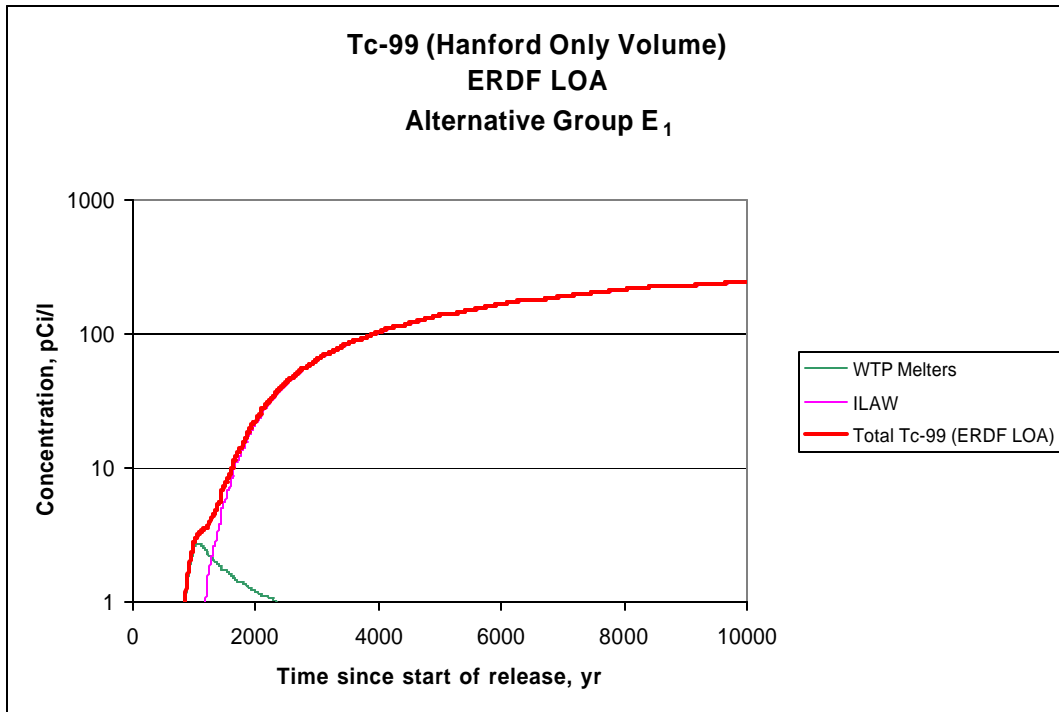


Figure G.62. Tc-99 and I-129 Concentration Profiles at 1-km Line of Analysis (ERDF)
(Alternative Group E₁ – Hanford Only Wastes Disposed of After 1995)

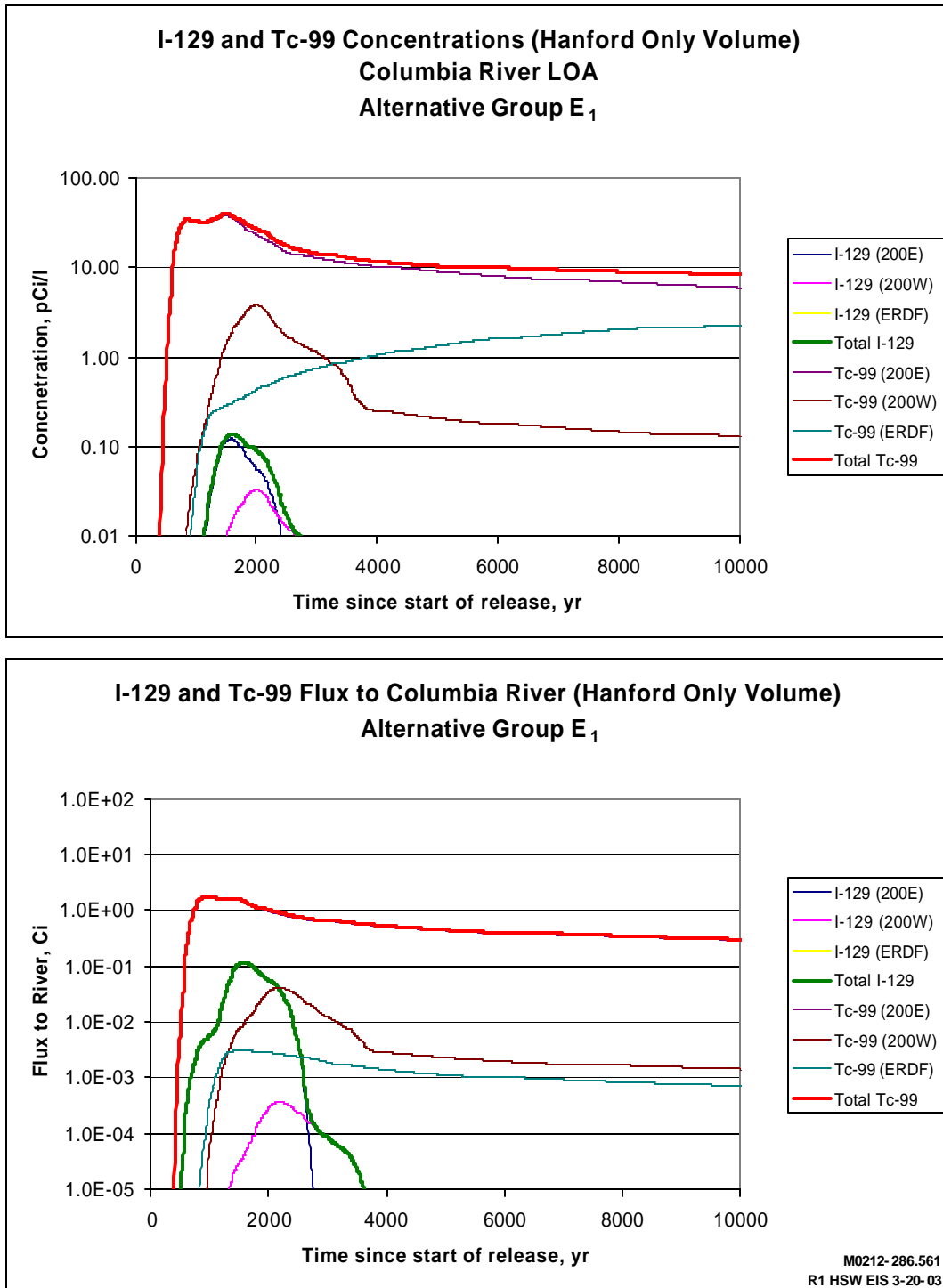


Figure G.63. I-129 and Tc-99 Concentration and River Flux Profiles Along the Columbia River LOA
(Alternative Group E₁ – Hanford Only Wastes Disposed of After 1995)

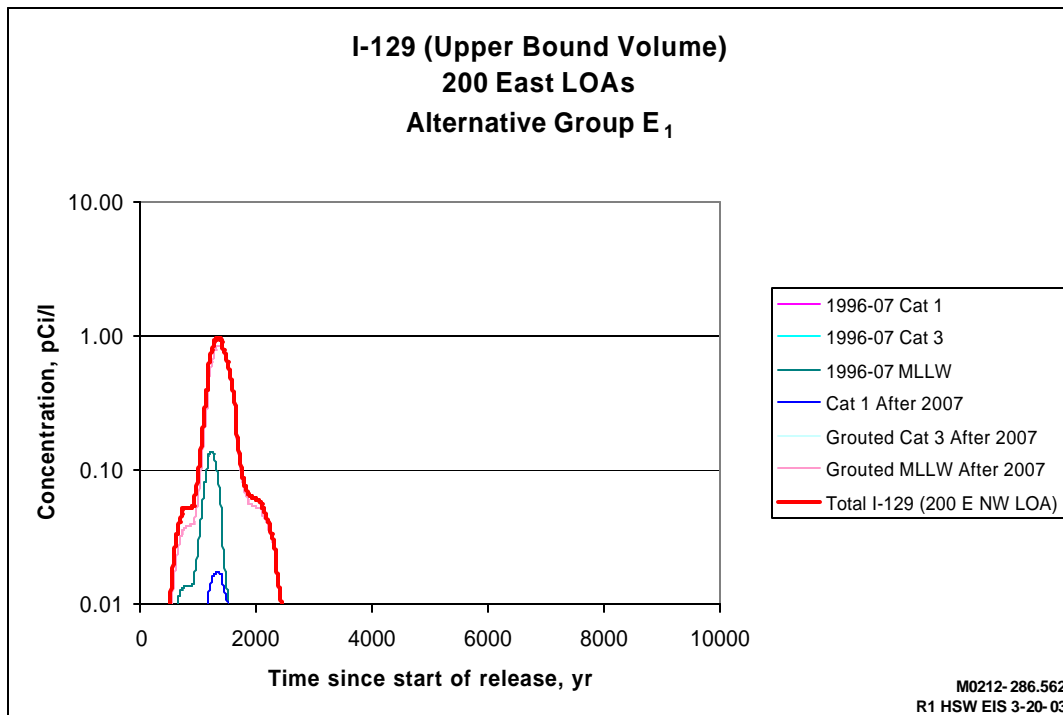
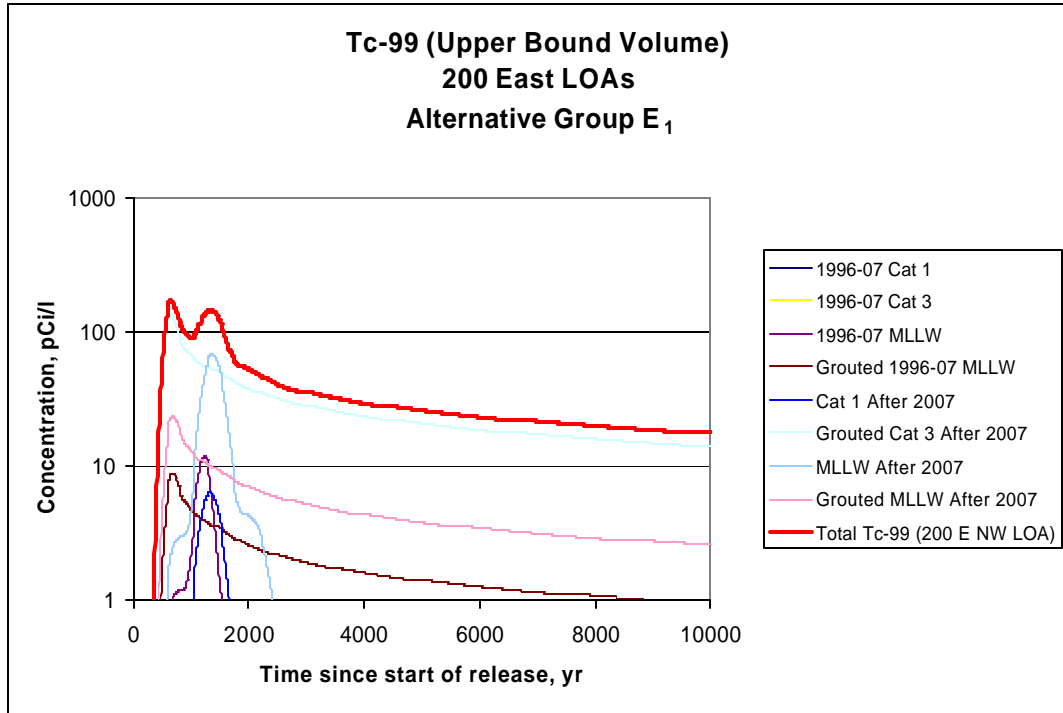


Figure G.64. Tc-99 and I-129 Concentration Profiles at the 200 East LOAs (Alternative Group E₁ – Upper Bound Volume Wastes Disposed of After 1995)

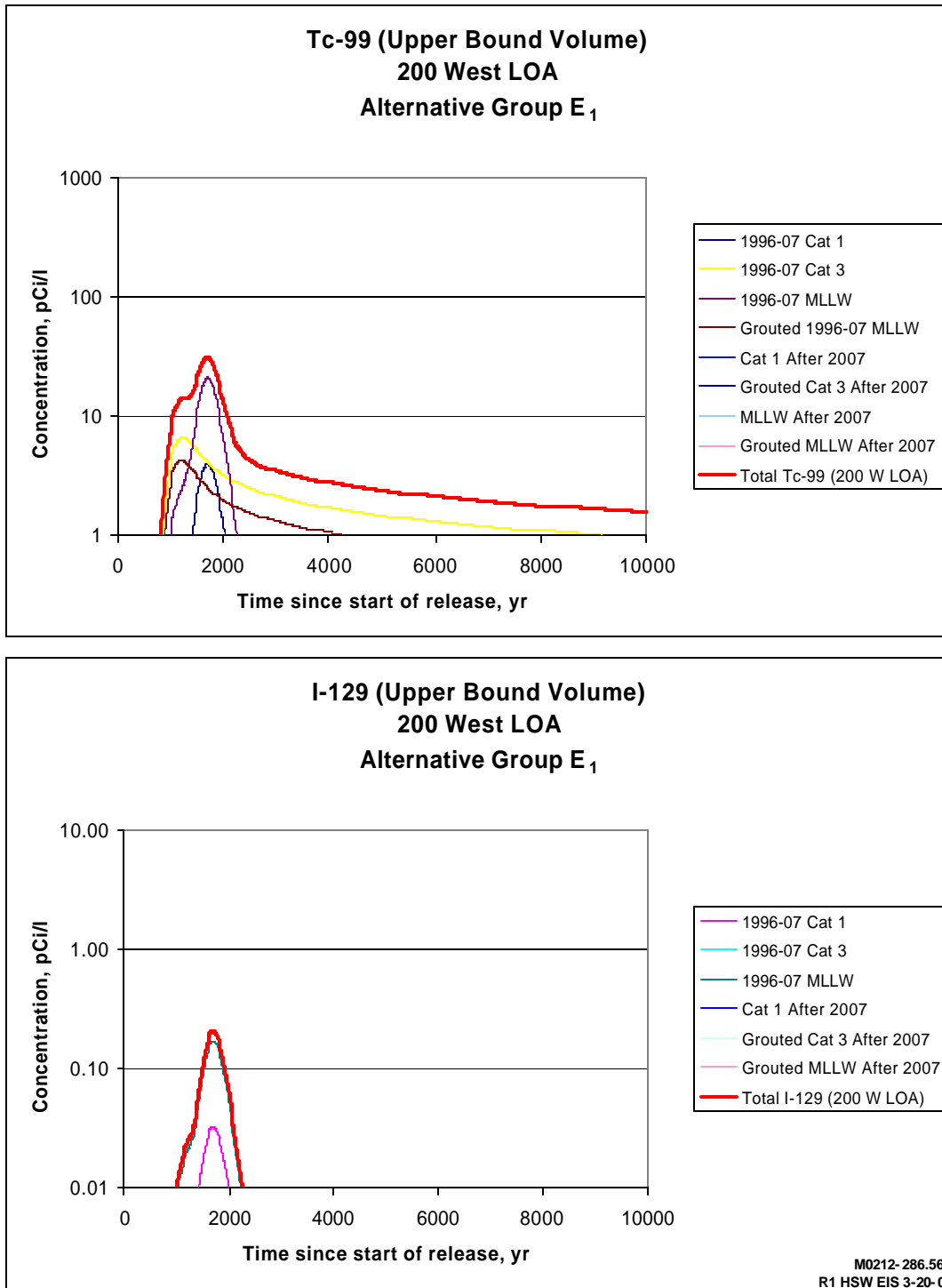


Figure G.65. Tc-99 and I-129 Concentration Profiles at the 200 West LOA (Alternative Group E₁ – Upper Bound Volume Wastes Disposed of After 1995)

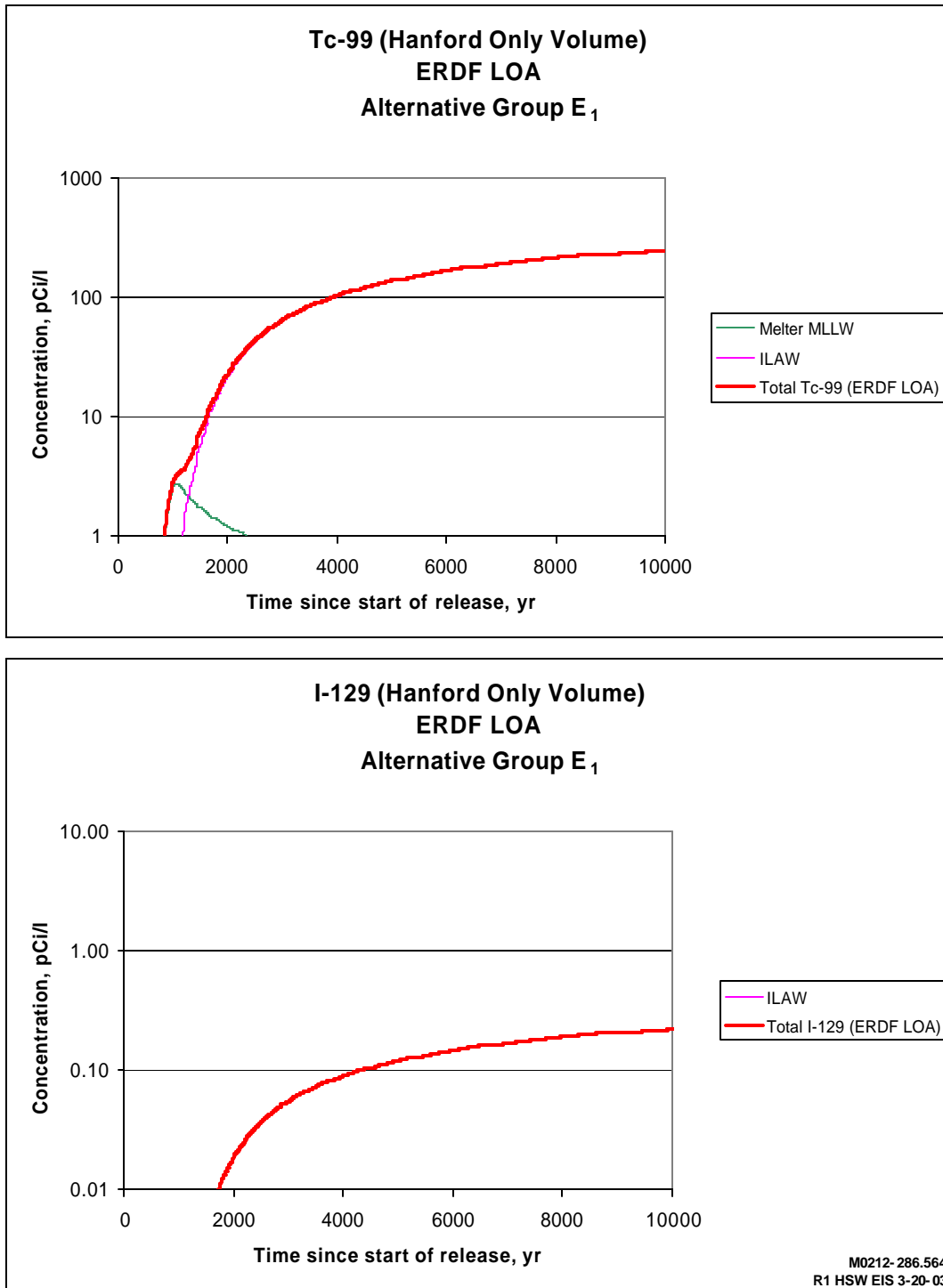


Figure G.66. Tc-99 and I-129 Concentration Profiles at 1-km Line of Analysis (200 ERDF)
(Alternative Group E₁ – Upper Bound Volume Wastes Disposed of After 1995)

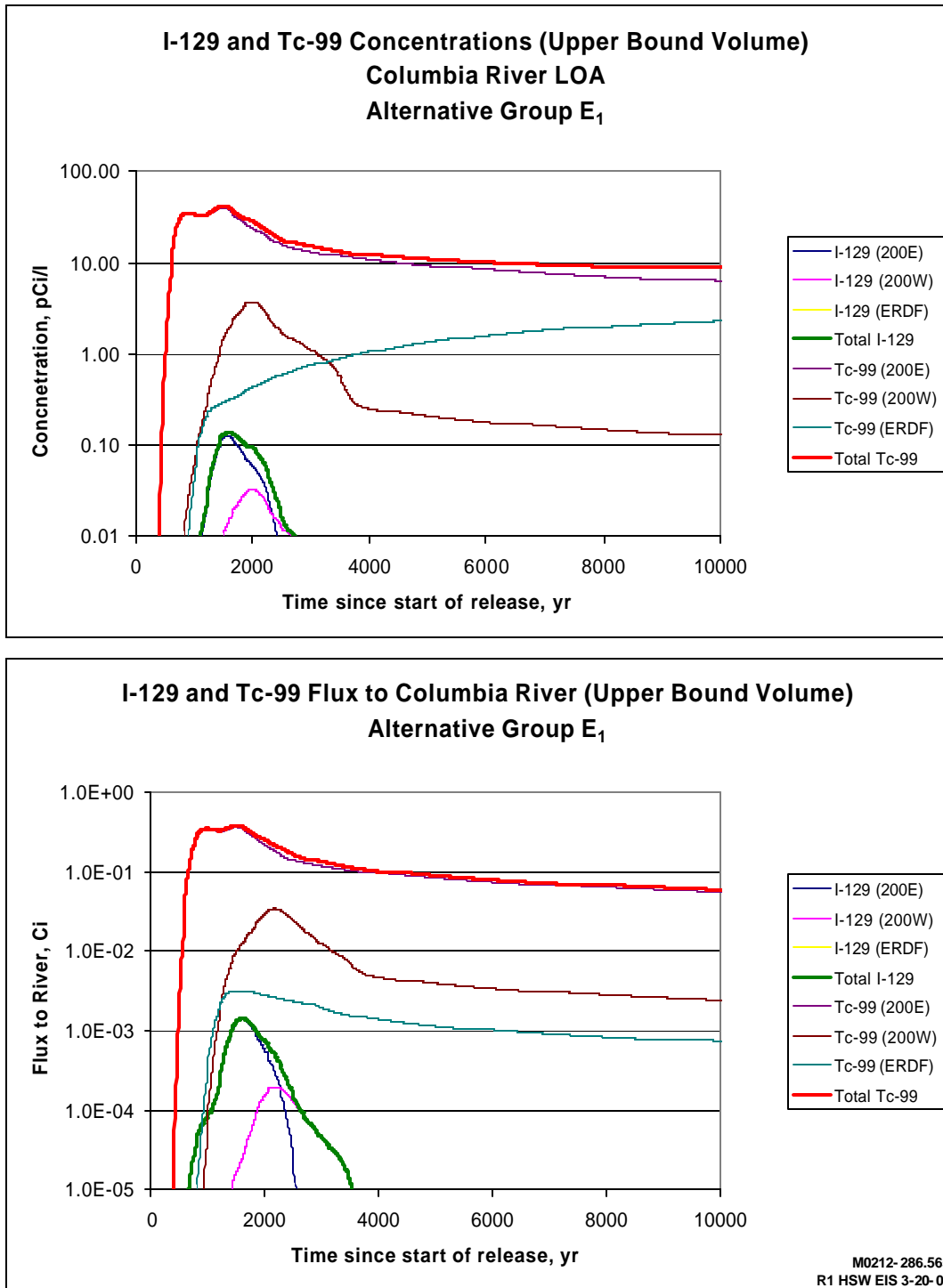


Figure G.67. I-129 and Tc-99 Concentration and River Flux Profiles Along the Columbia River LOA
(Alternative Group E₁ – Upper Bound Volume Wastes Disposed of After 1995)

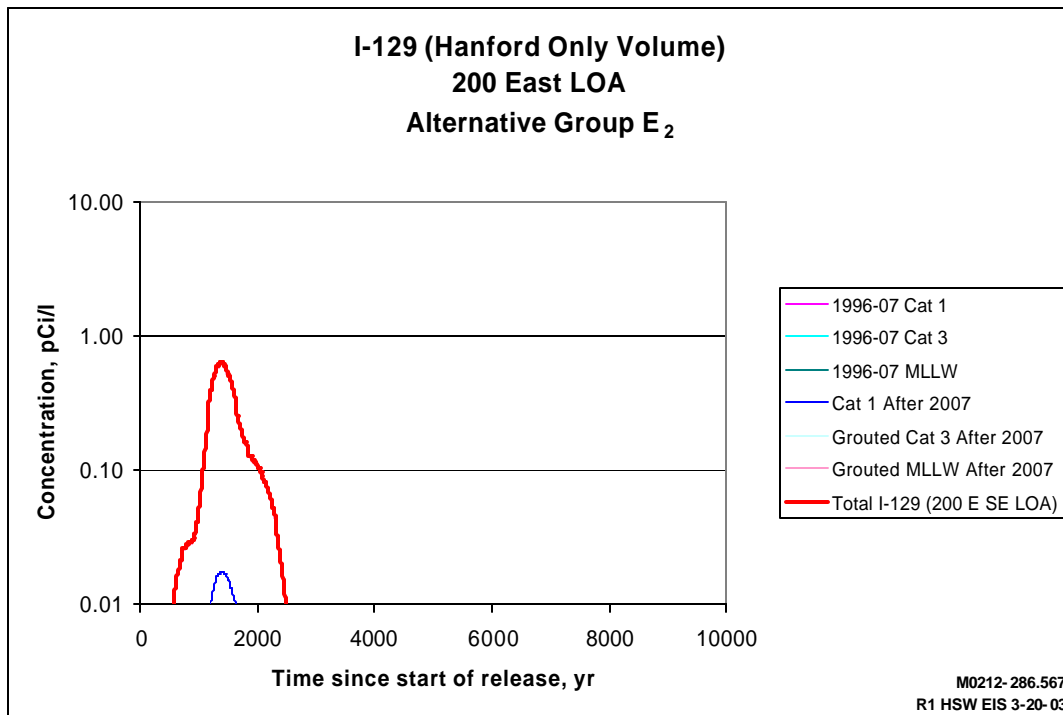
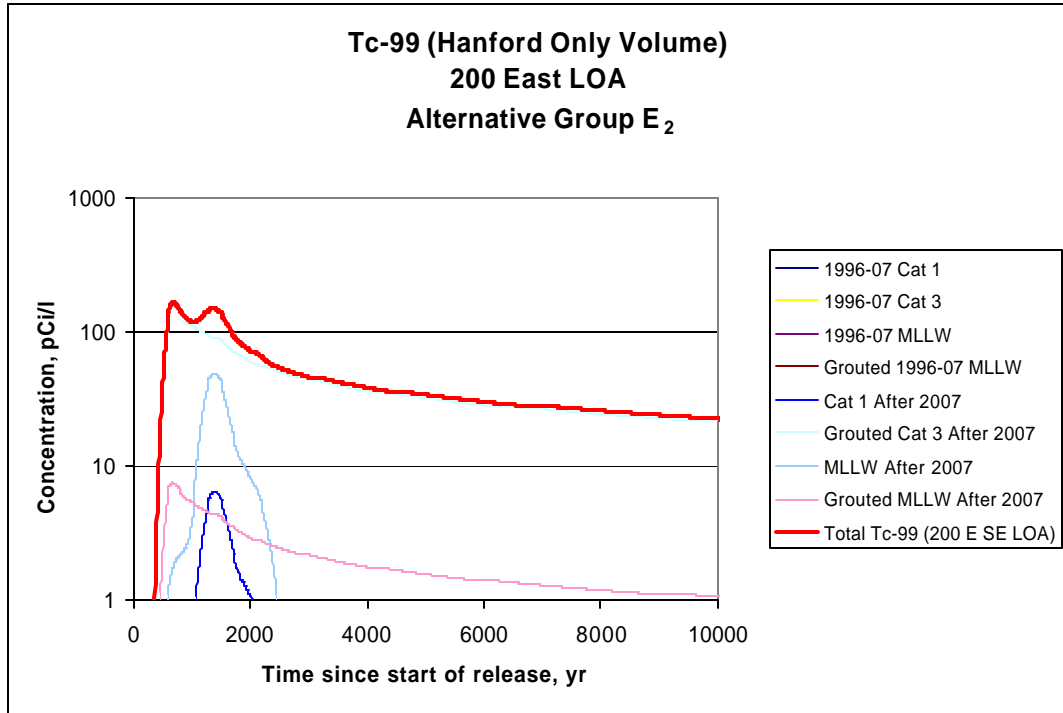


Figure G.68. Tc-99 and I-129 Concentration Profiles at the 200 East LOA (Alternative Group E₂ – Hanford Only Wastes Disposed of After 1995)

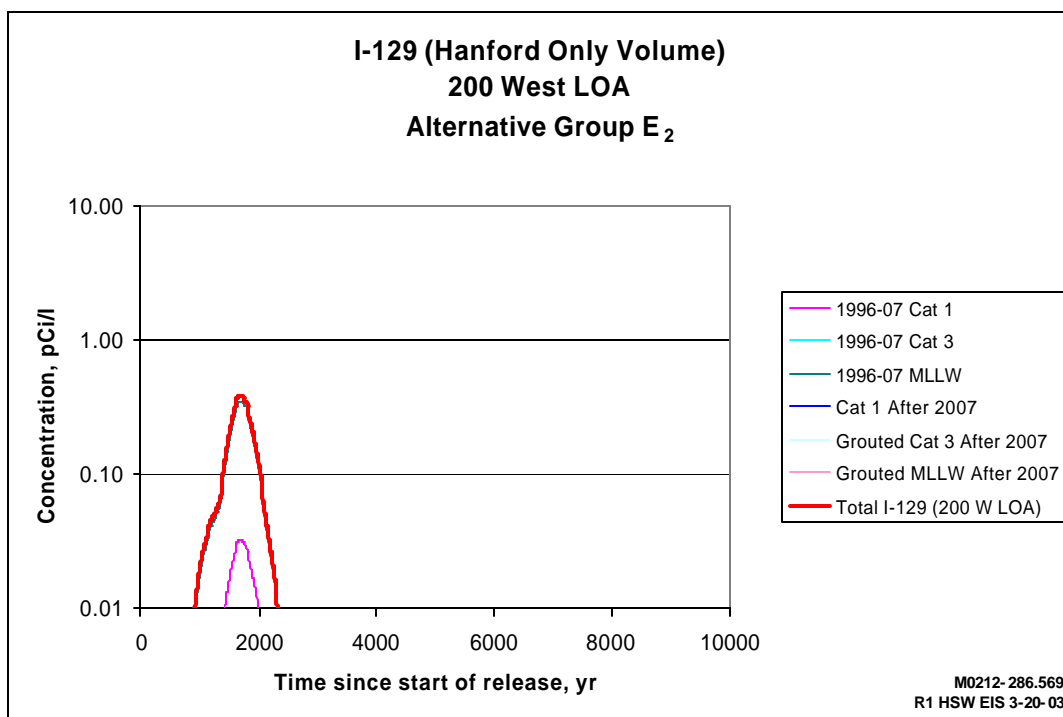
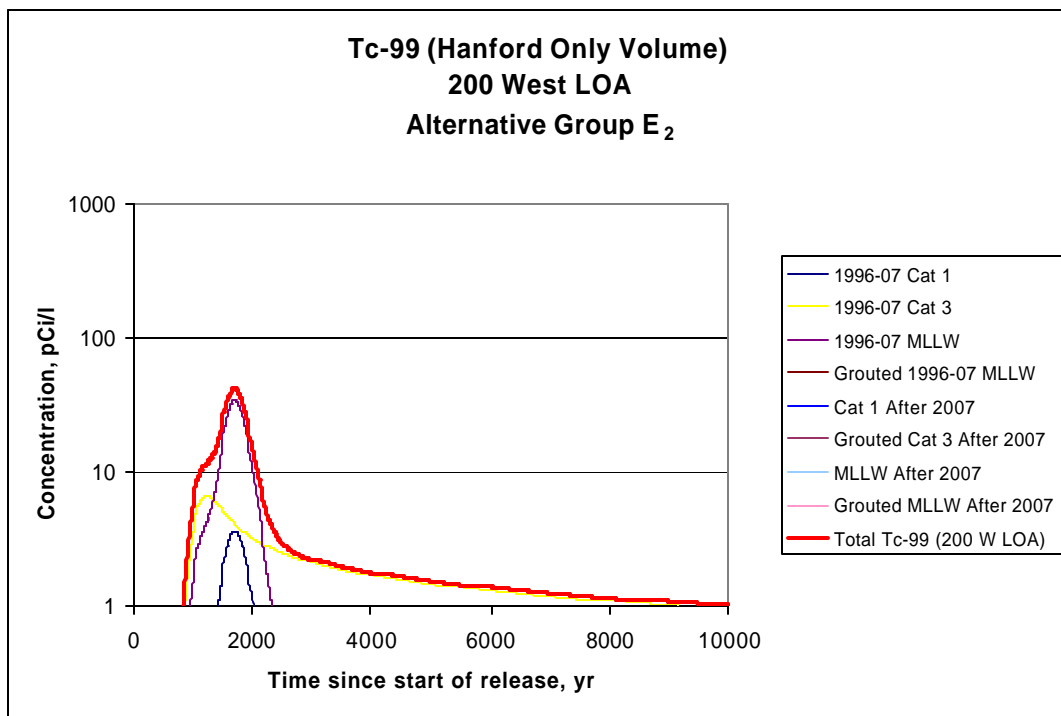


Figure G.69. Tc-99 and I-129 Concentration Profiles at the 200 West LOA (Alternative Group E₂ – Hanford Only Wastes Disposed of After 1995)

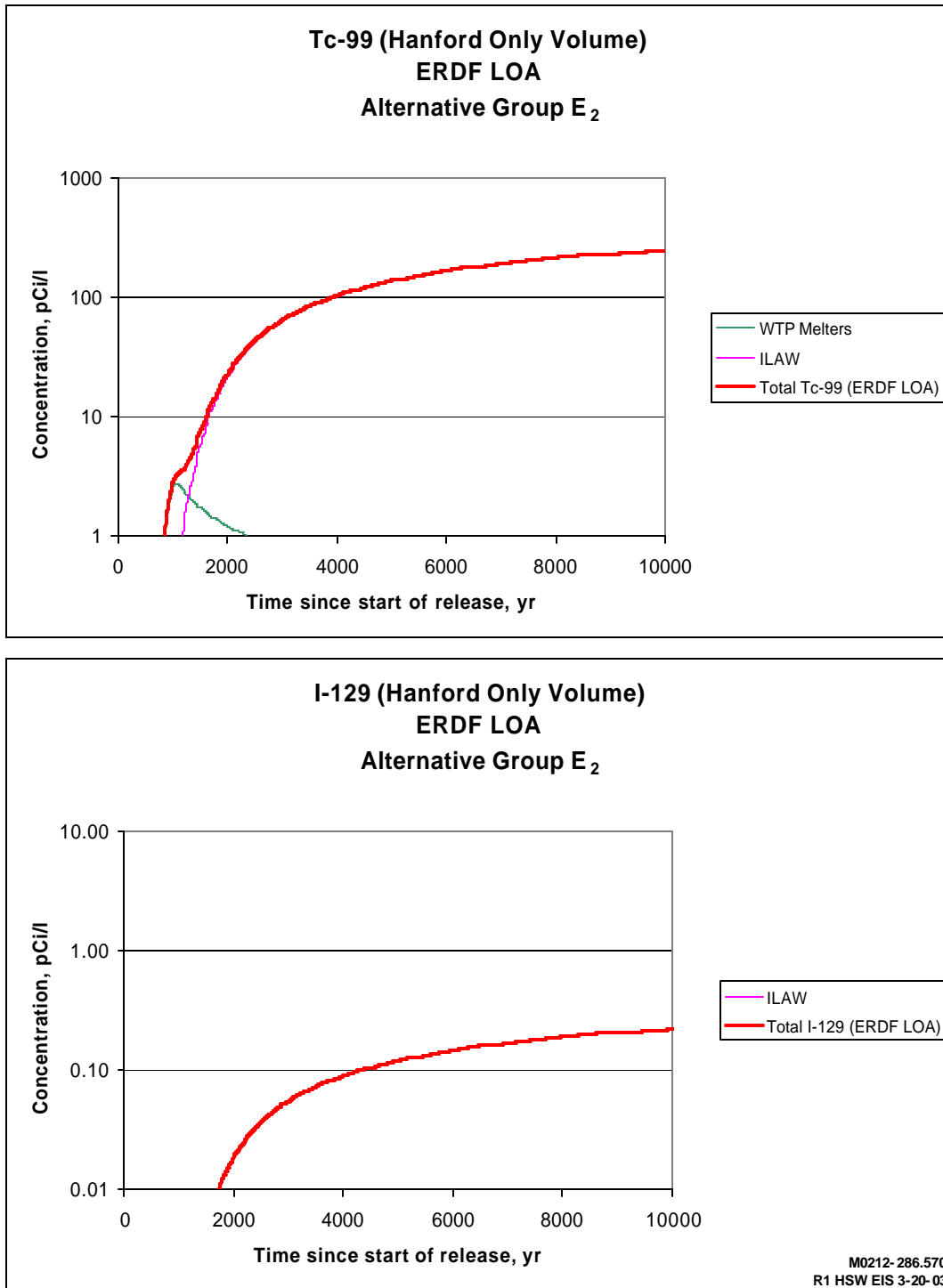


Figure G.70. Tc-99 and I-129 Concentration Profiles at 1-km Line of Analysis (ERDF) (Alternative Group E₂ – Hanford Only Wastes Disposed of After 1995)

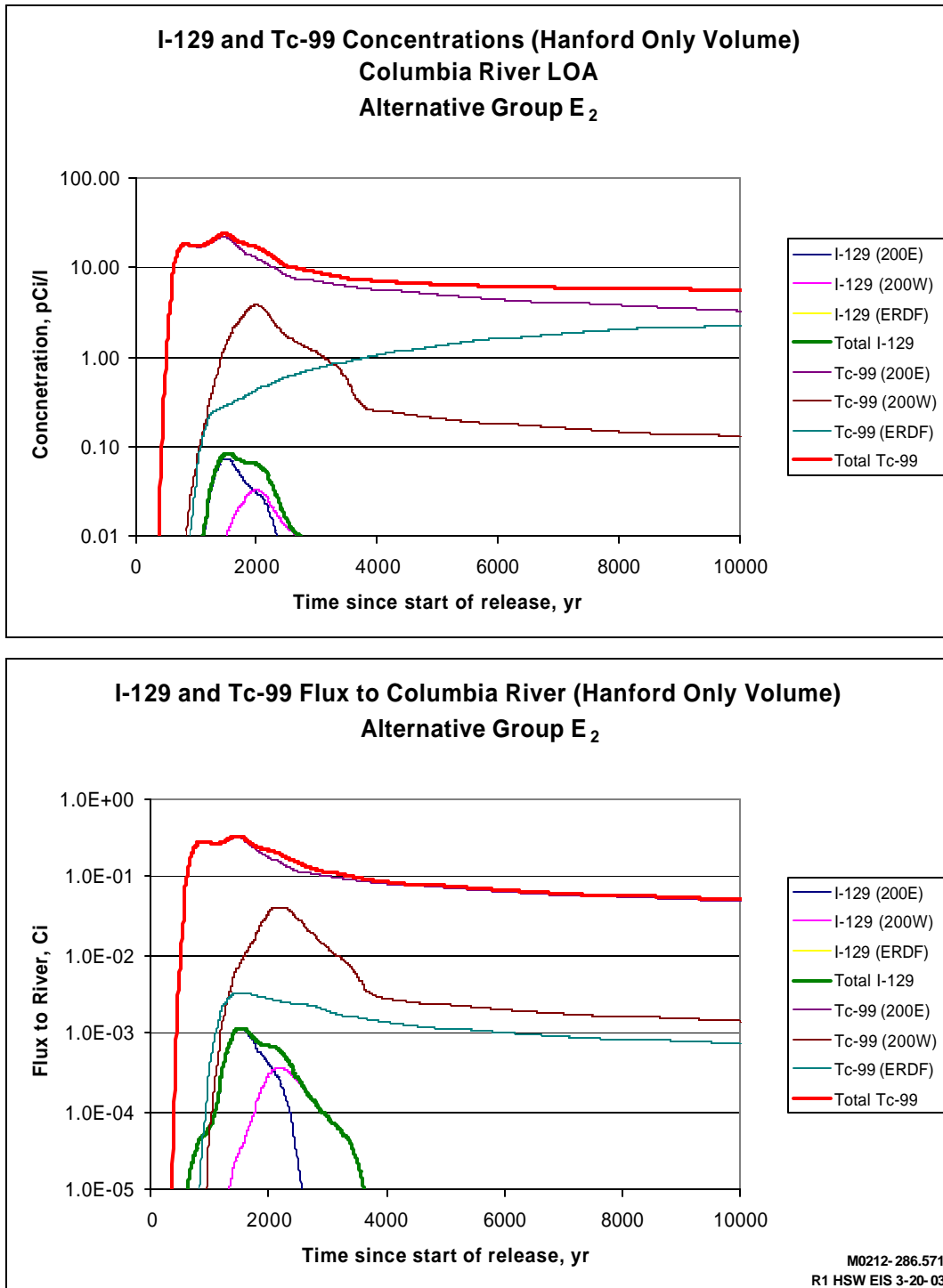


Figure G.71. I-129 and Tc-99 Concentration and River Flux Profiles Along the Columbia River LOA
(Alternative Group E₂ – Hanford Only Wastes Disposed of After 1995)

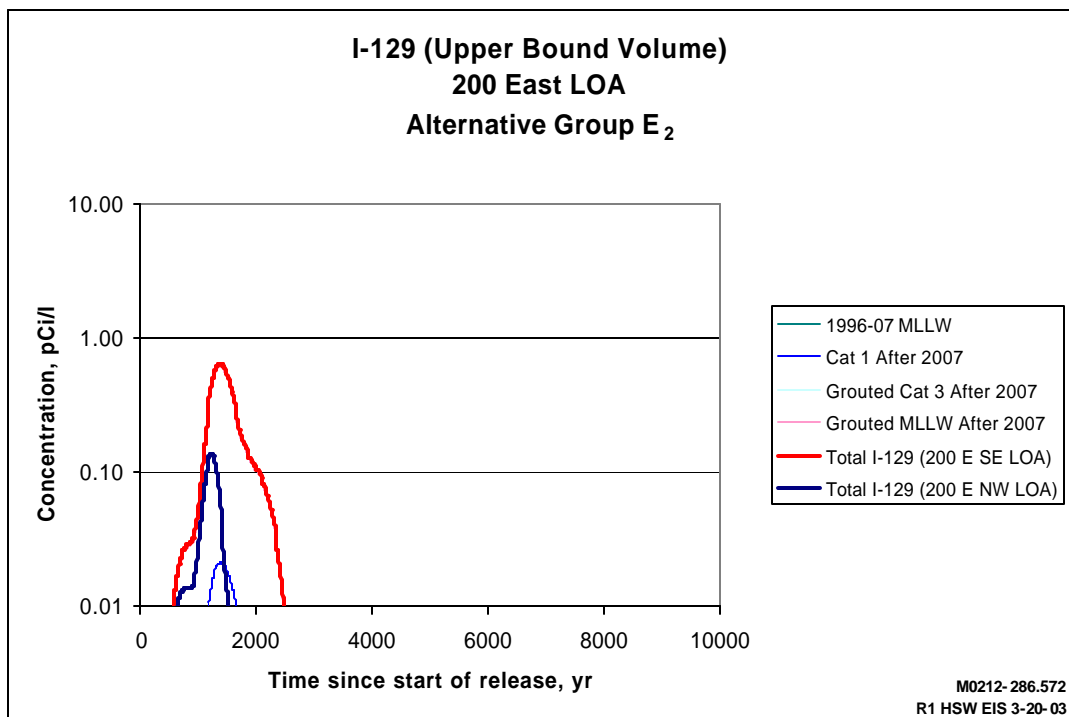
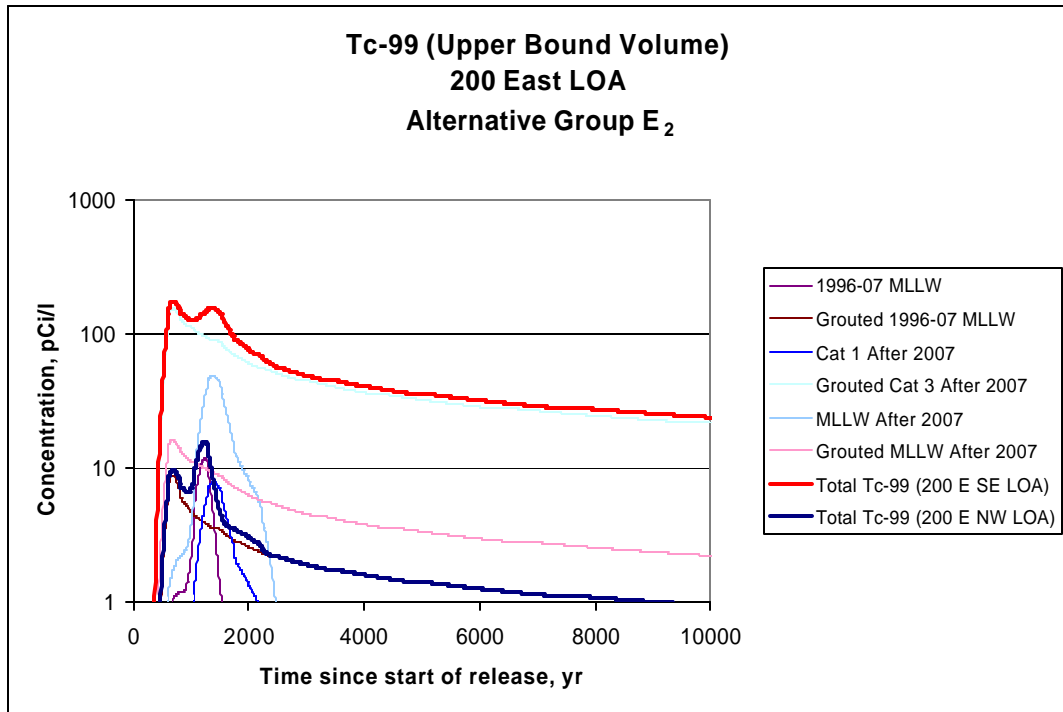


Figure G.72. Tc-99 and I-129 Concentration Profiles at the 200 East LOA (Alternative Group E₂ – Upper Bound Volume Wastes Disposed of After 1995)

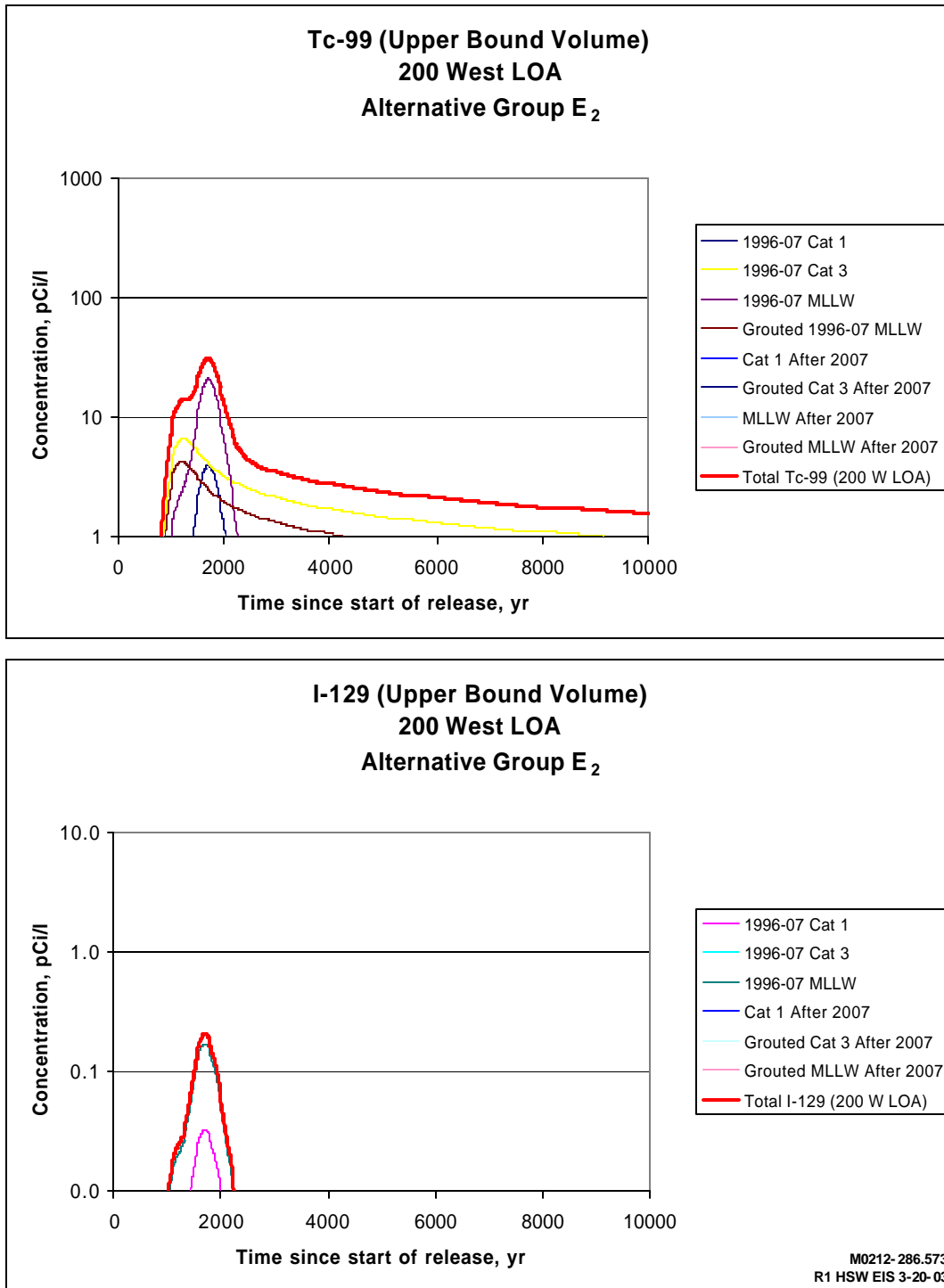


Figure G.73. Tc-99 and I-129 Concentration Profiles at the 200 West LOA (Alternative Group E₂ – Upper Bound Volume Wastes Disposed of After 1995)

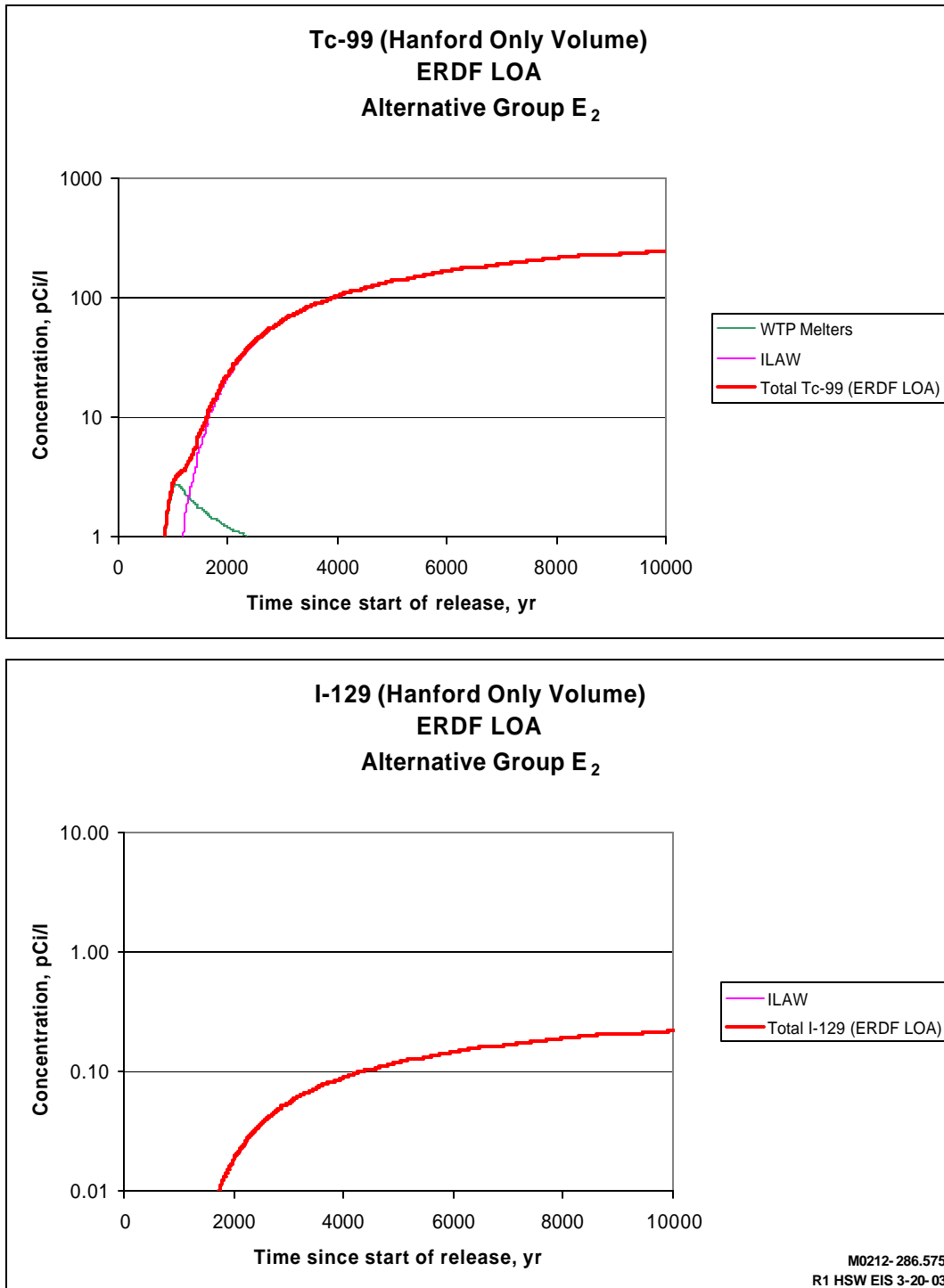


Figure G.74. Tc-99 and I-129 Concentration Profiles at 1-km Line of Analysis (ERDF) (Alternative Group E₂ – Upper Bound Volume Wastes Disposed of After 1995)

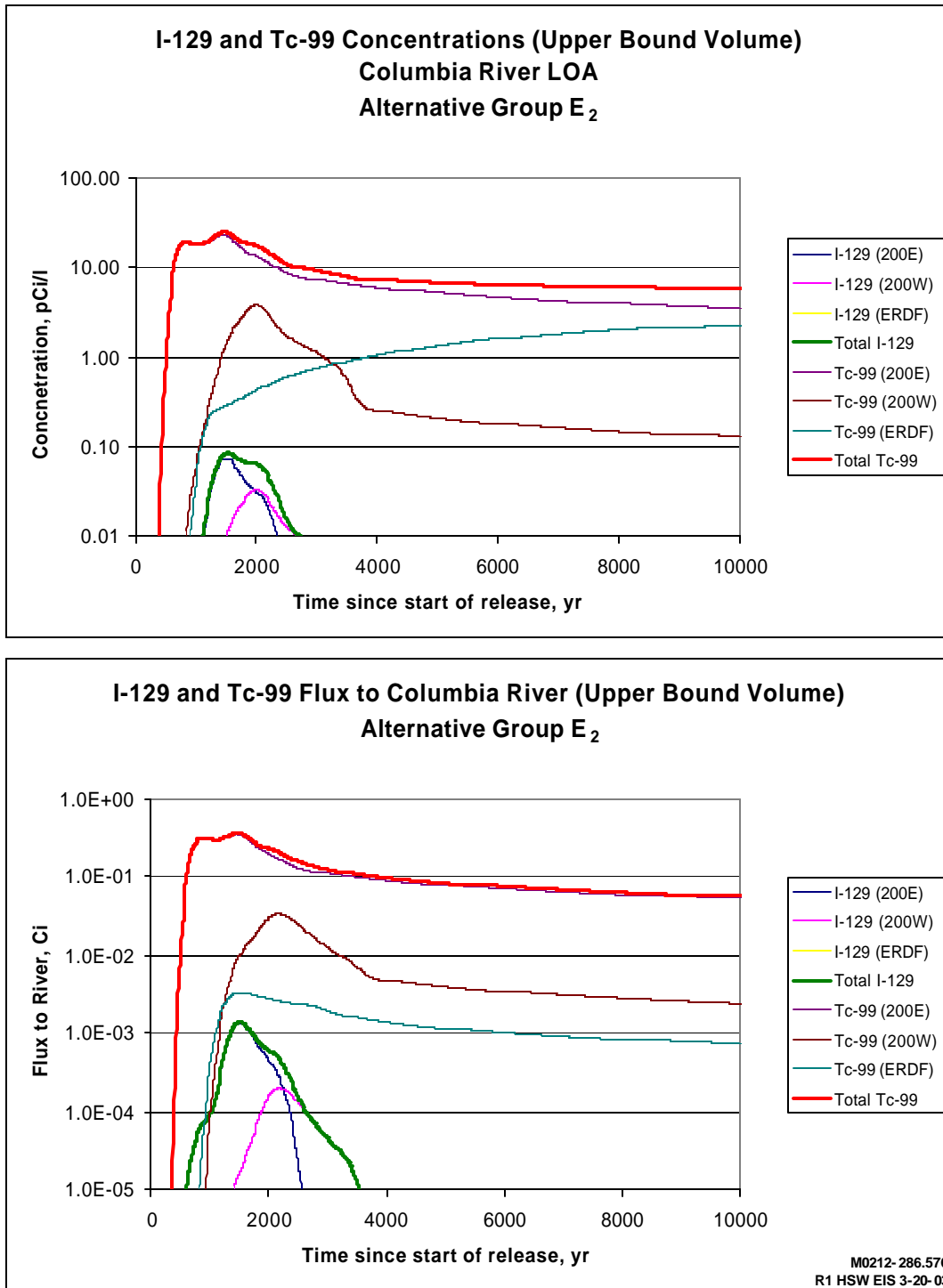


Figure G.75. I-129 and Tc-99 Concentration and River Flux Profiles Along the Columbia River LOA
(Alternative Group E₂ – Upper Bound Volume Wastes Disposed of After 1995)

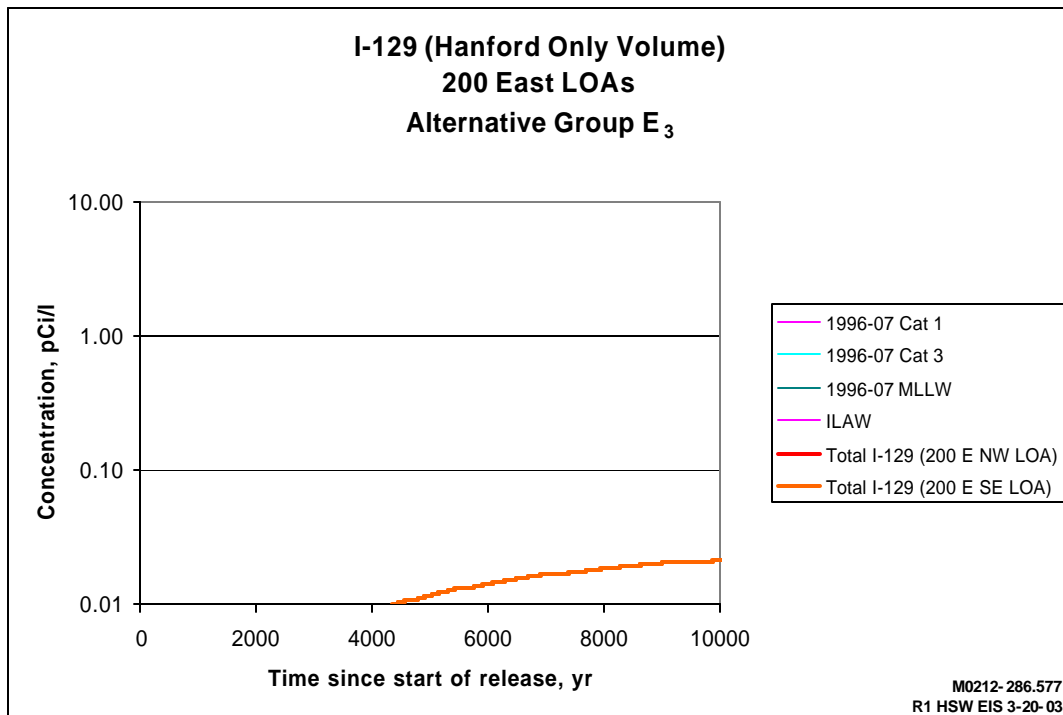
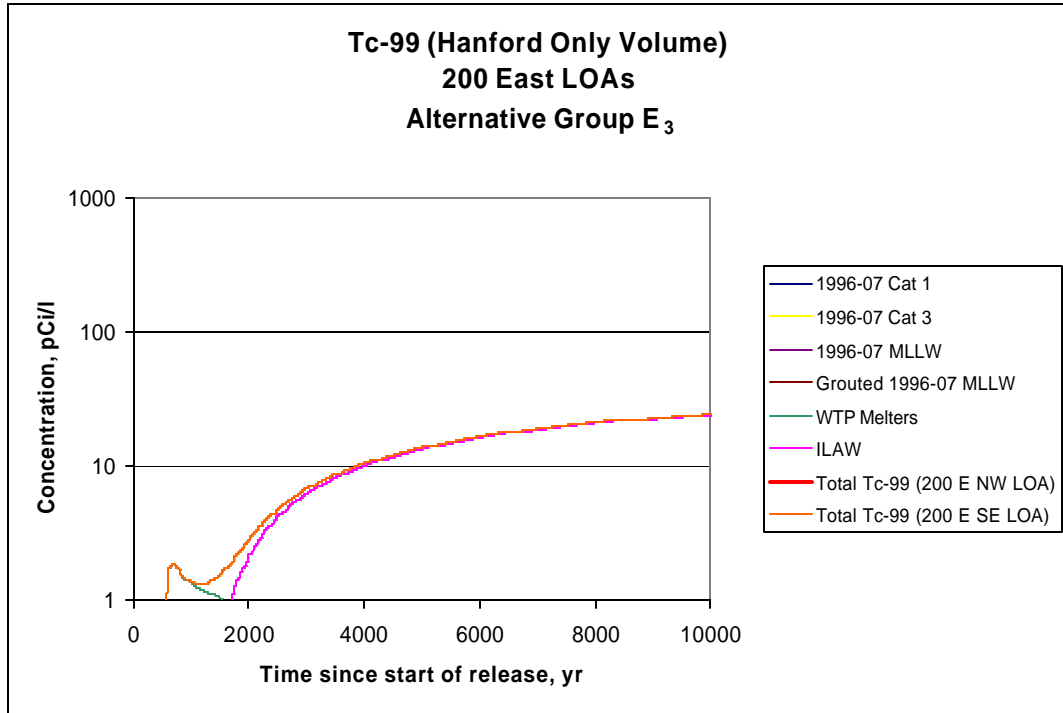


Figure G.76. Tc-99 and I-129 Concentration Profiles at the 200 East LOAs (Alternative Group E₃ – Hanford Only Wastes Disposed of After 1995)

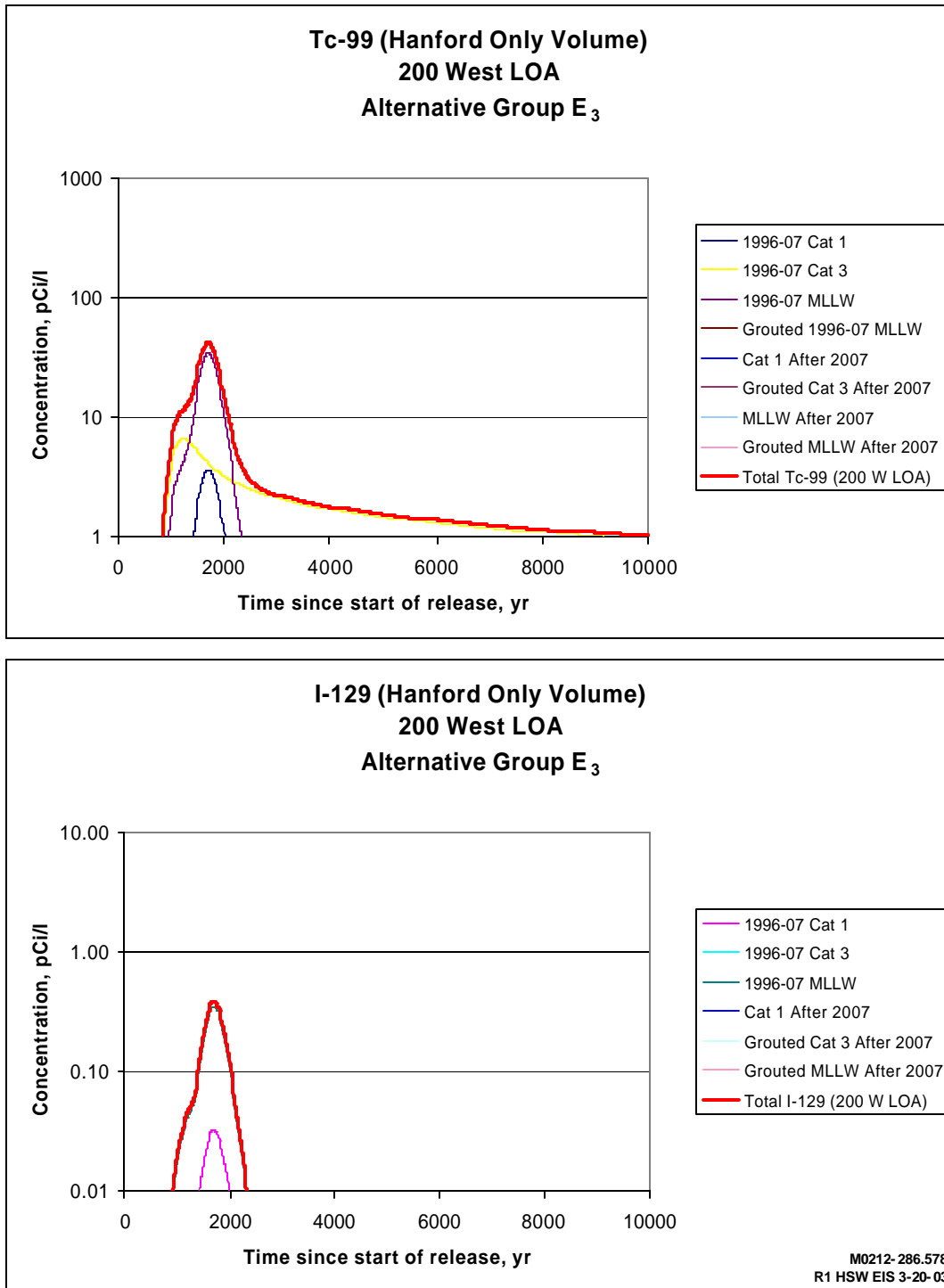


Figure G.77. Tc-99 and I-129 Concentration Profiles at the 200 West LOA
(Alternative Group E₃ – Hanford Only Wastes Disposed of After 1995)

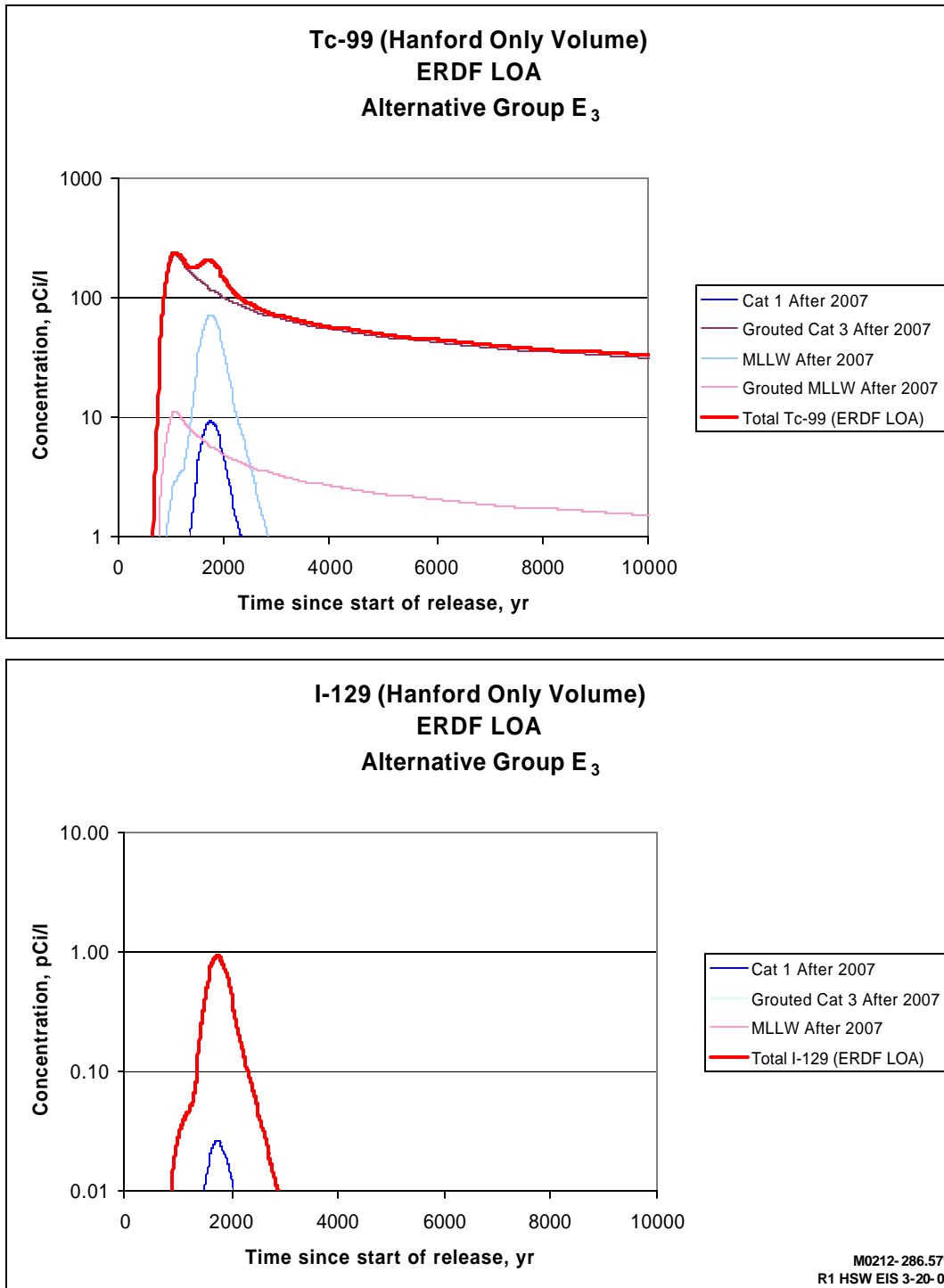


Figure G.78. Tc-99 and I-129 Concentration Profiles at the ERDF LOA (Alternative Group E₃ – Hanford Only Wastes Disposed of After 1995)

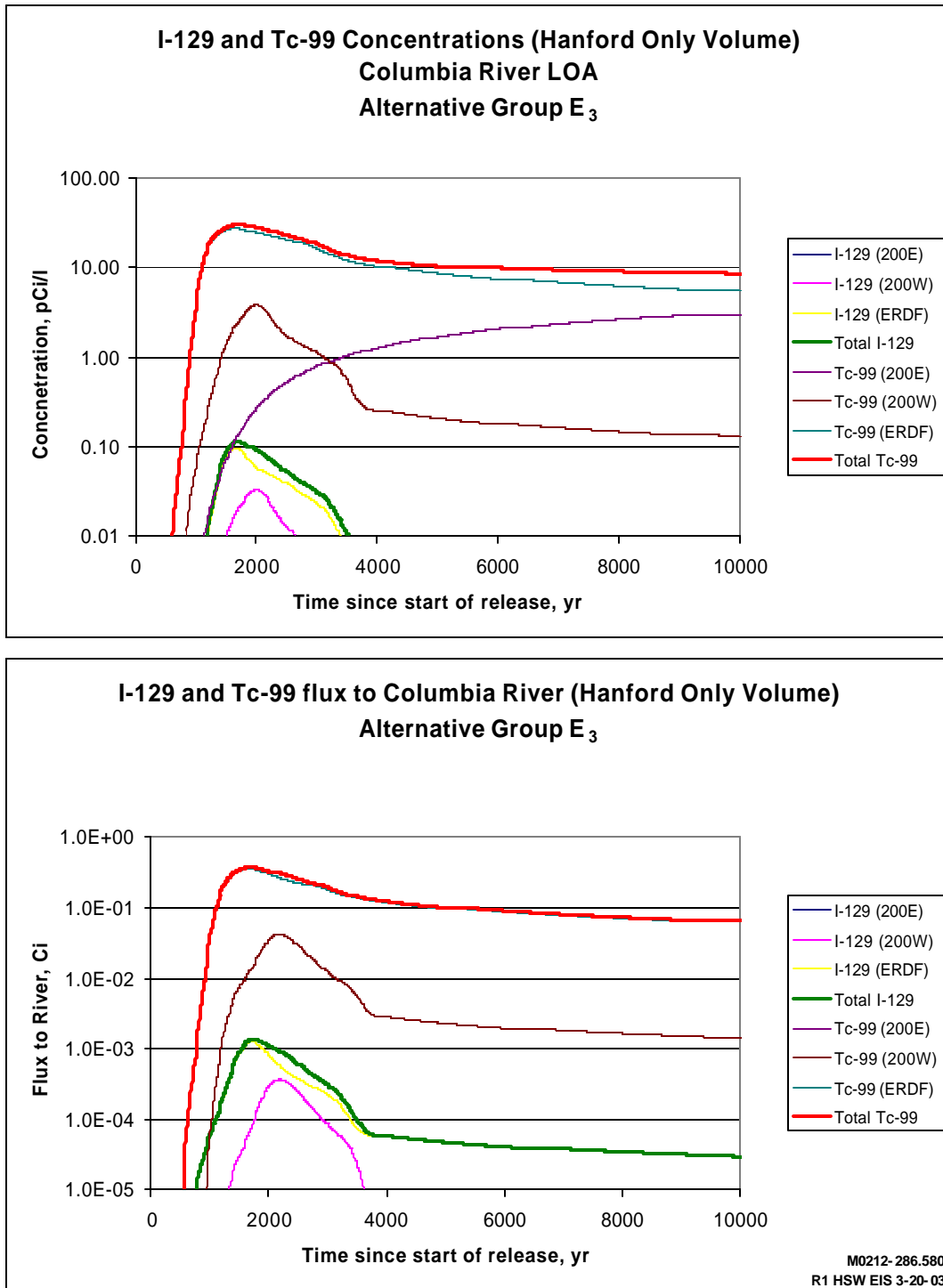


Figure G.79. I-129 and Tc-99 Concentration and River Flux Profiles Along the Columbia River LOA
(Alternative Group E₃ – Hanford Only Wastes Disposed of After 1995)

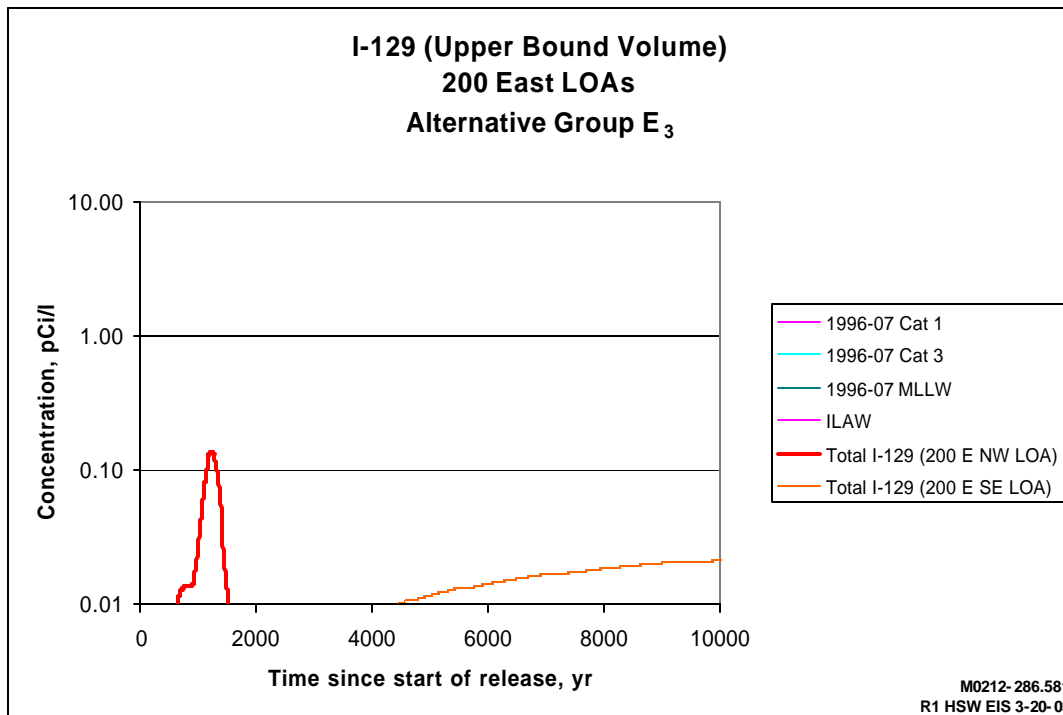
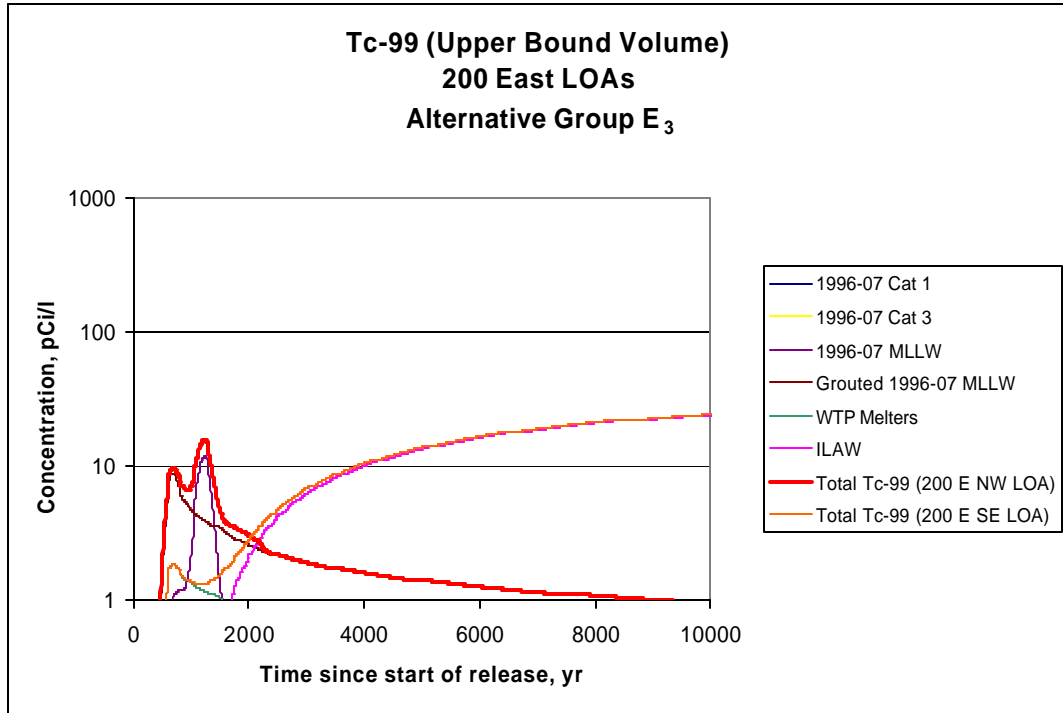


Figure G.80. Tc-99 and I-129 Concentration Profiles at the 200 East LOAs (Alternative Group E₃ – Upper Bound Volume Wastes Disposed of After 1995)

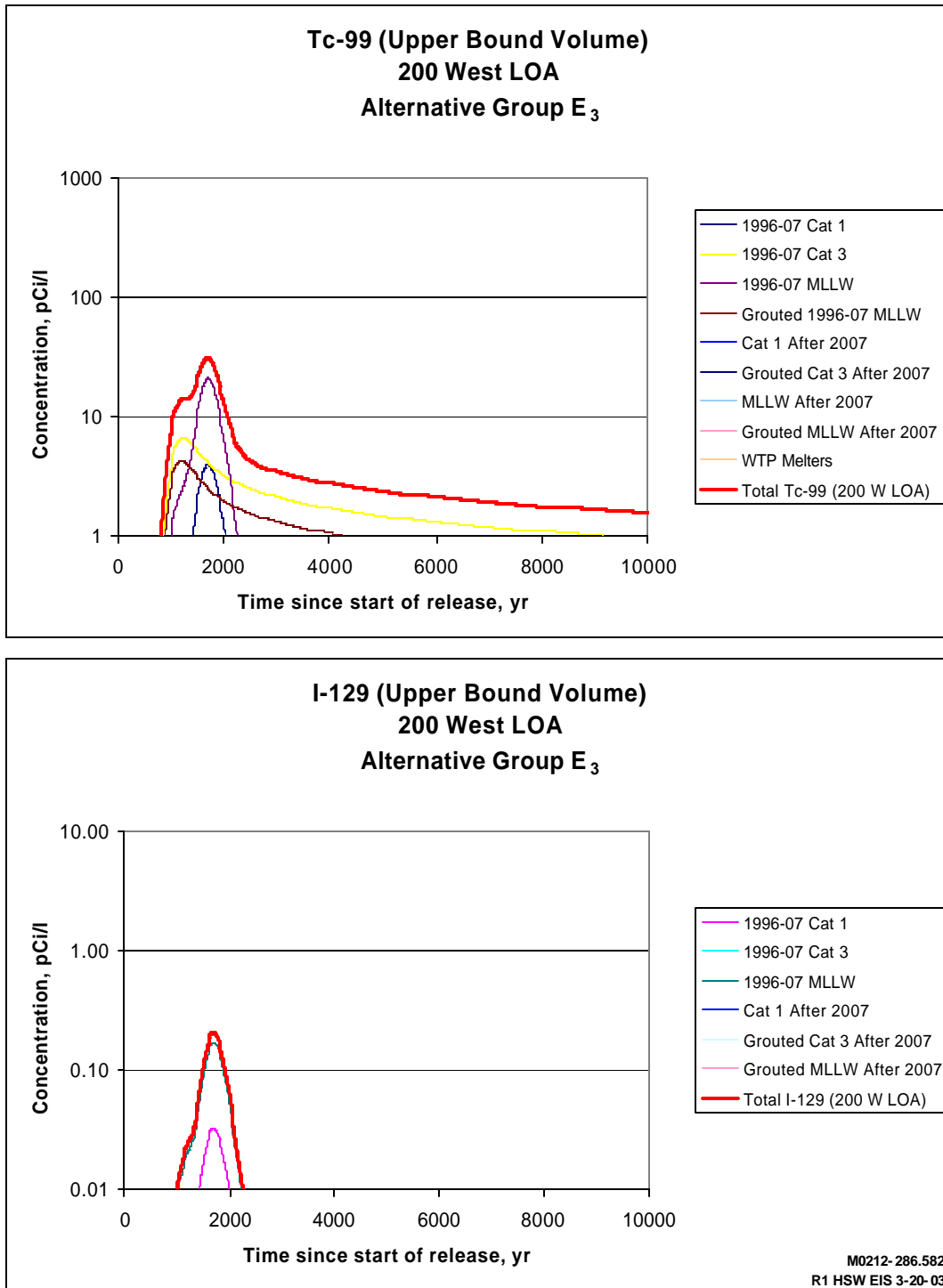


Figure G.81. Tc-99 and I-129 Concentration Profiles at the 200 West LOA (Alternative Group E₃ – Upper Bound Volume Wastes Disposed of After 1995)

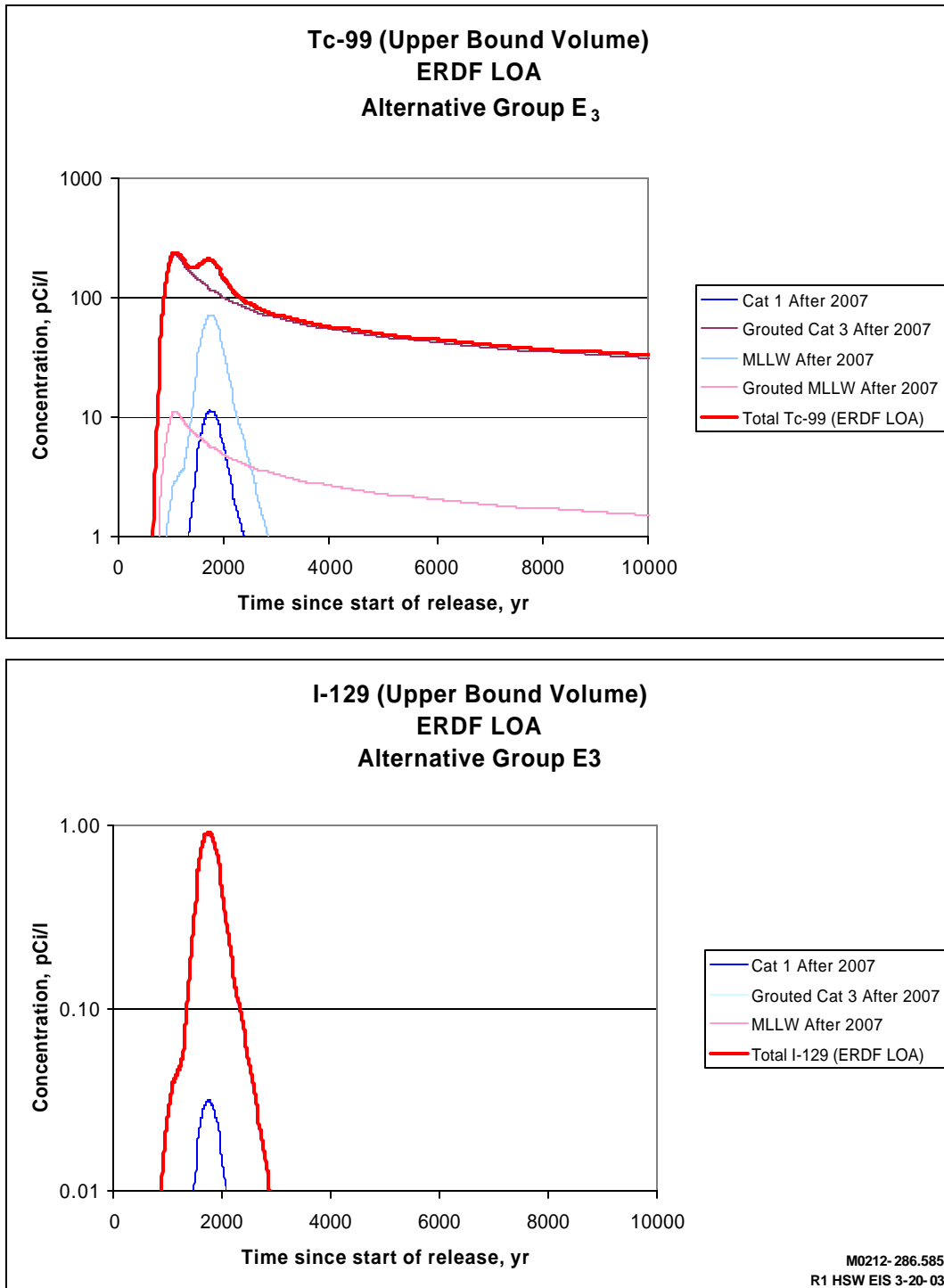


Figure G.82. Tc-99 and I-129 Concentration Profiles at 1-km Line of Analysis (ERDF)
(Alternative Group E₃ – Upper Bound Volume Wastes Disposed of After 1995)

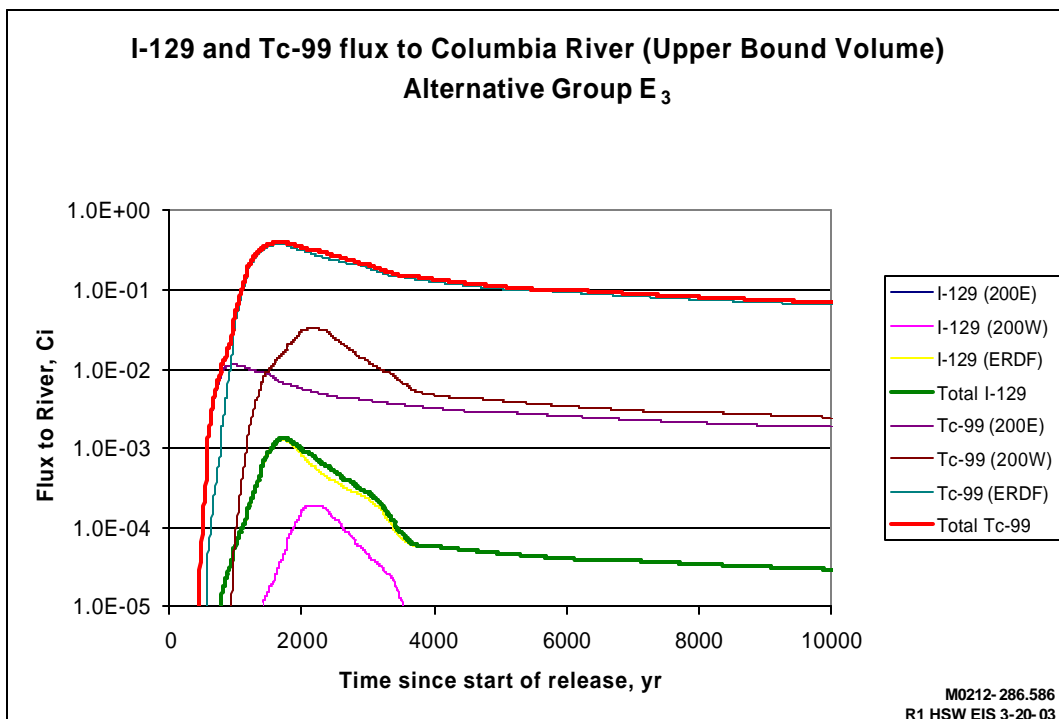
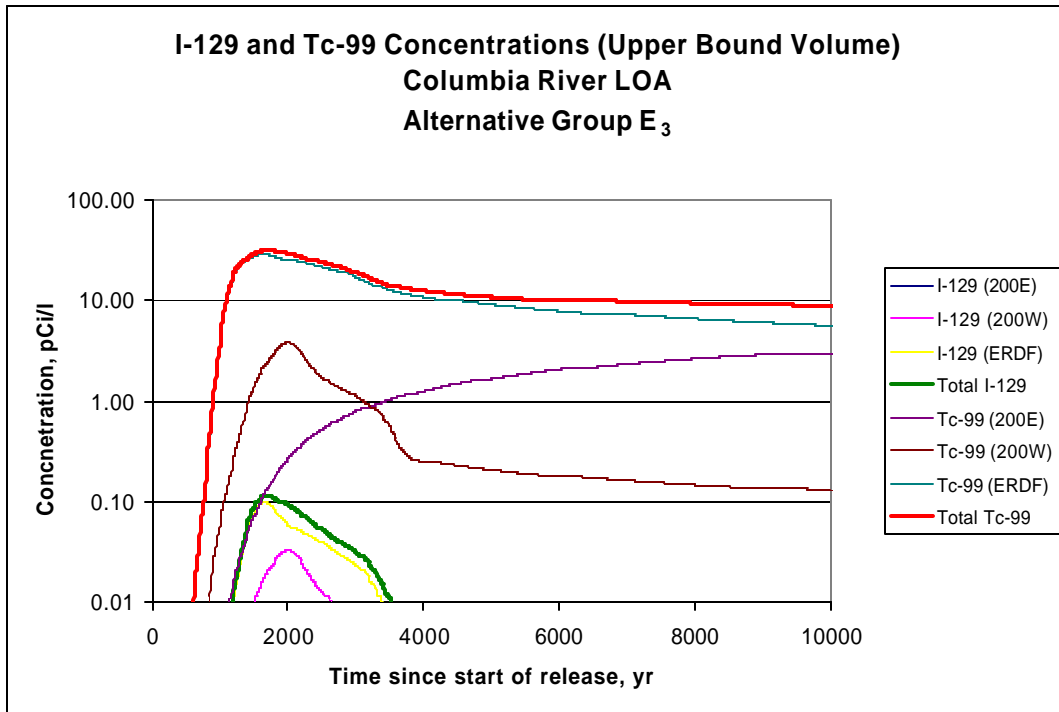


Figure G.83. I-129 and Tc-99 Concentration and River Flux Profiles Along the Columbia River LOA
(Alternative Group E₃ – Upper Bound Volume Wastes Disposed of After 1995)

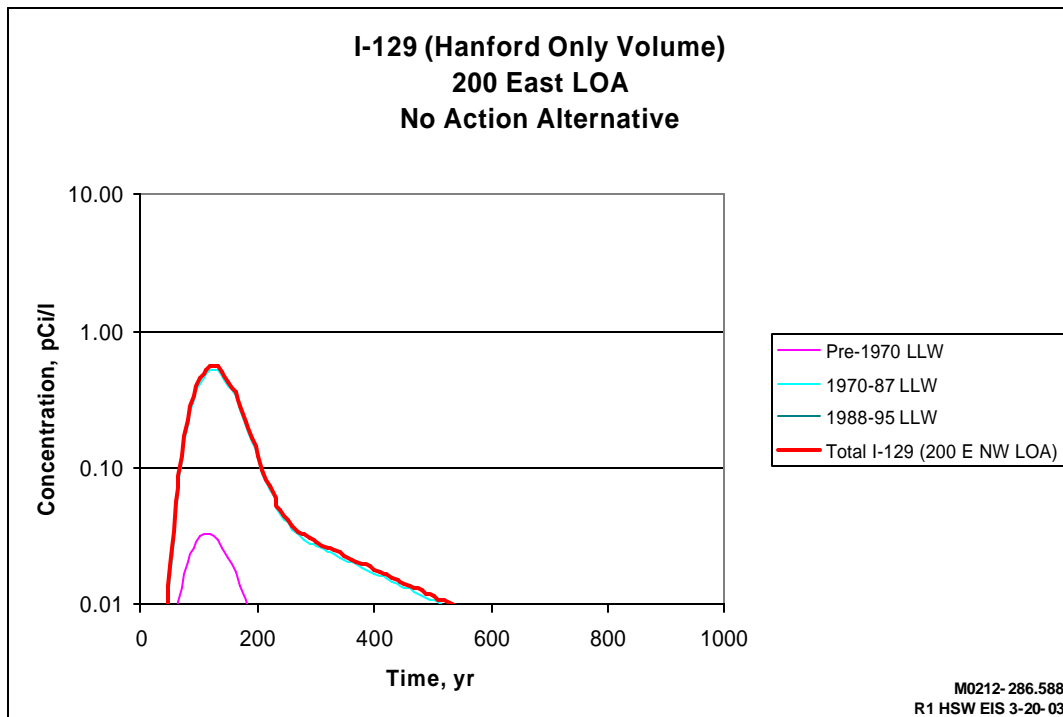
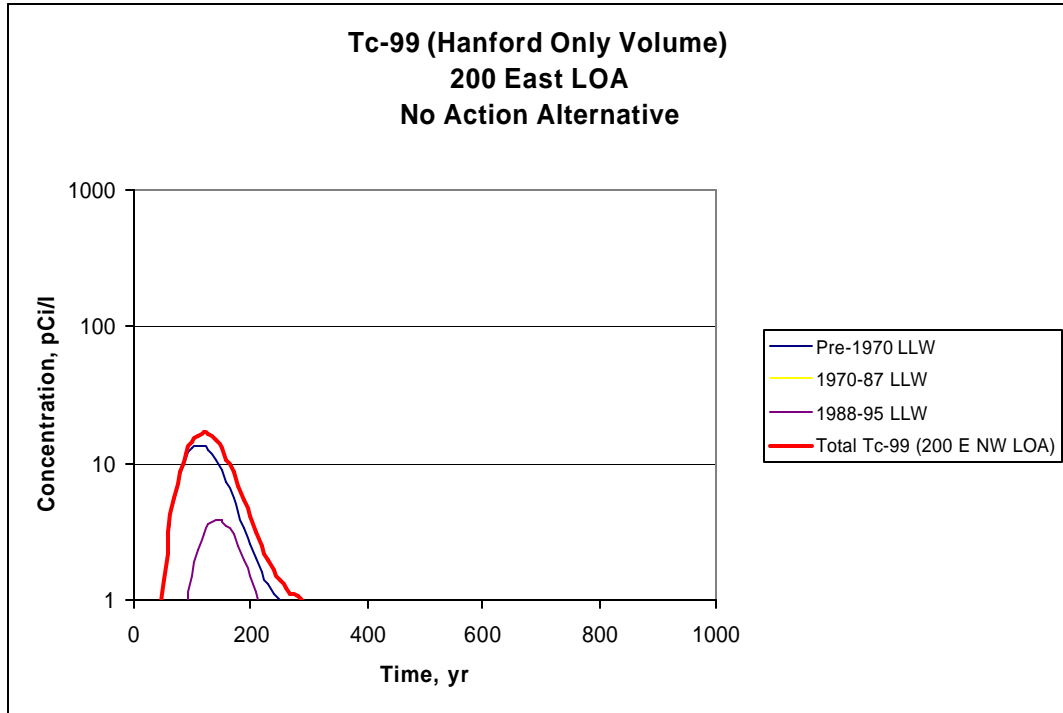


Figure G.84. Tc-99 and I-129 Concentration Profiles at the 200 East LOA (No Action Alternative – Previously Disposed of Wastes)

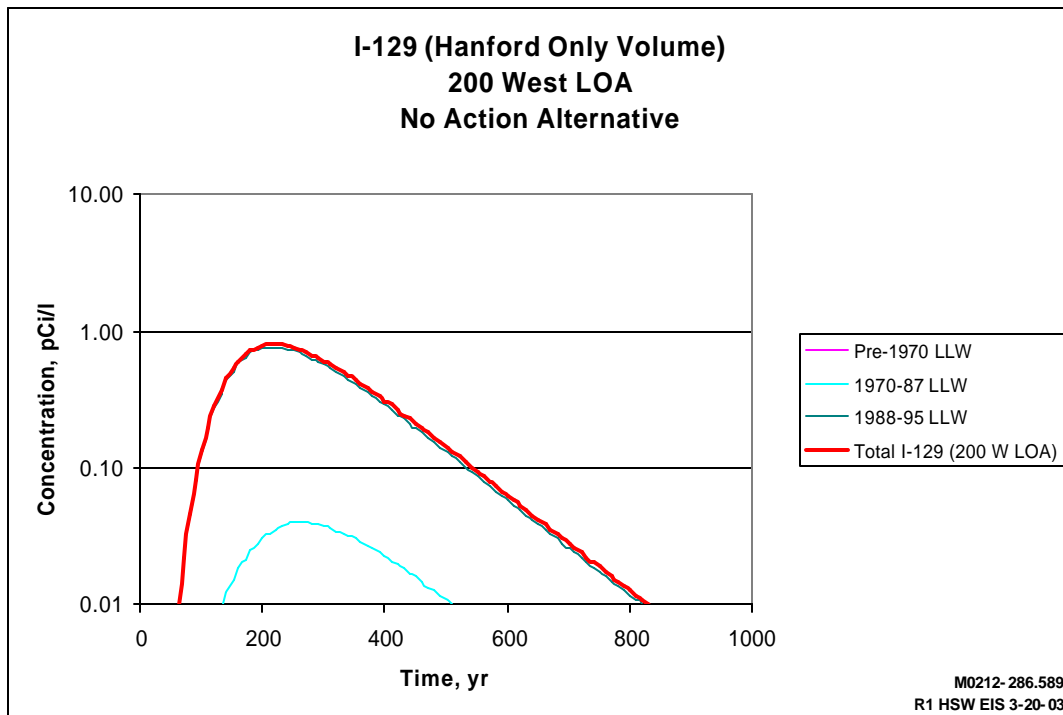
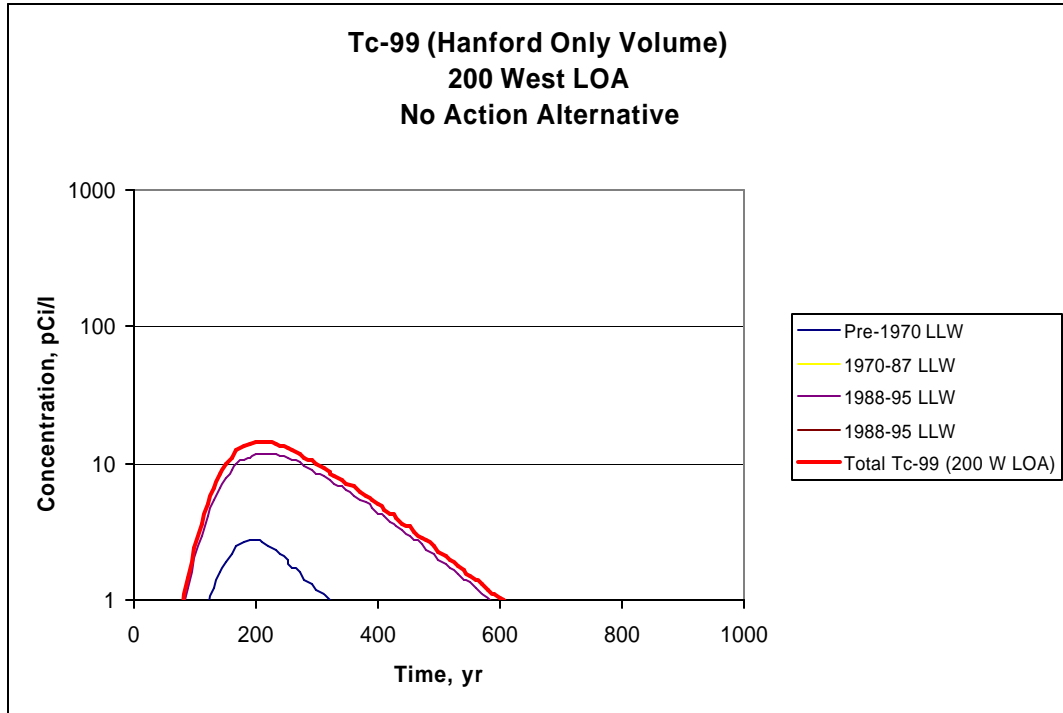
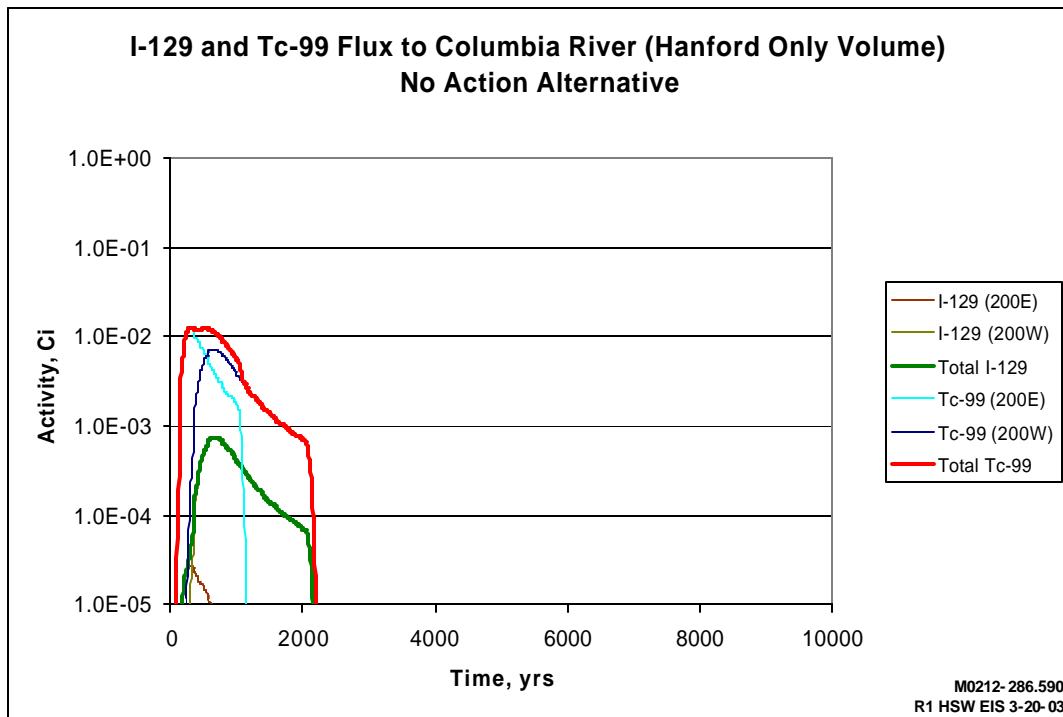
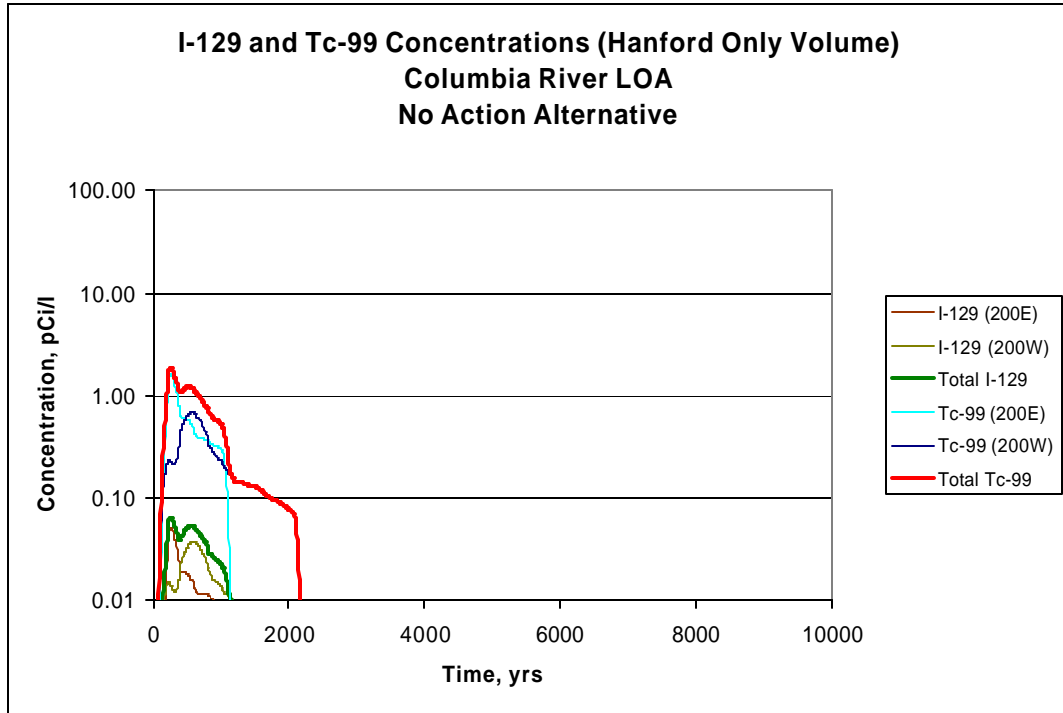


Figure G.85. Tc-99 and I-129 Concentration Profiles at the 200 West LOA (No Action Alternative - Previously Disposed of Wastes)



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Figure G.86. I-129 and Tc-99 Concentration and River Flux Profiles Along the Columbia River LOA
(No Action Alternative - Previously Disposed of Wastes)

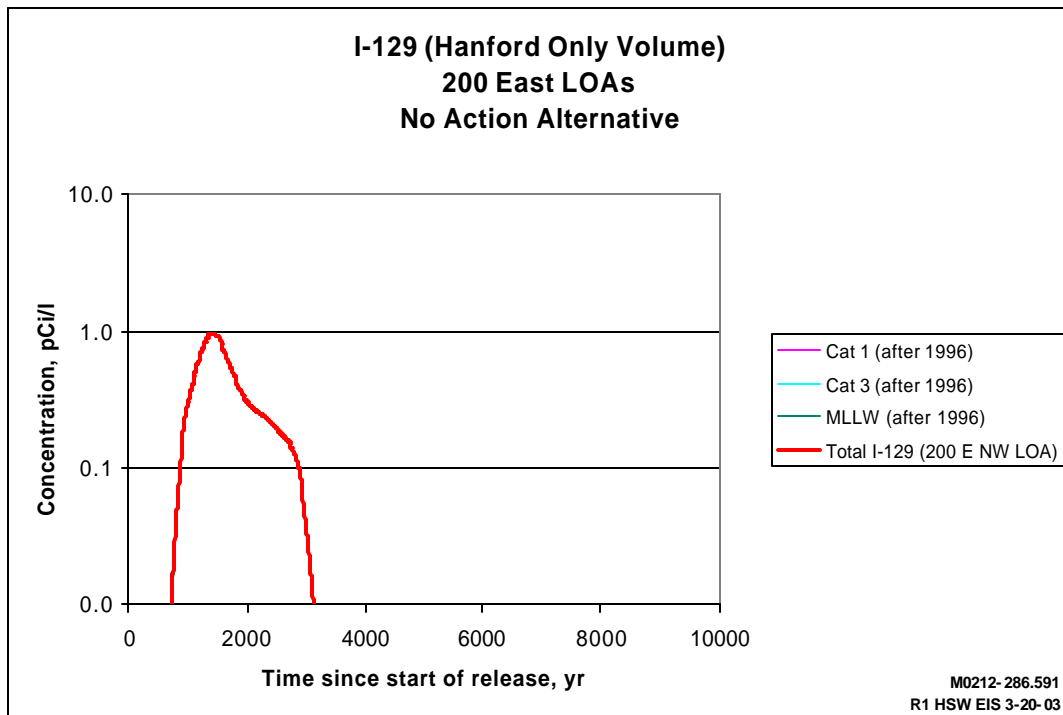
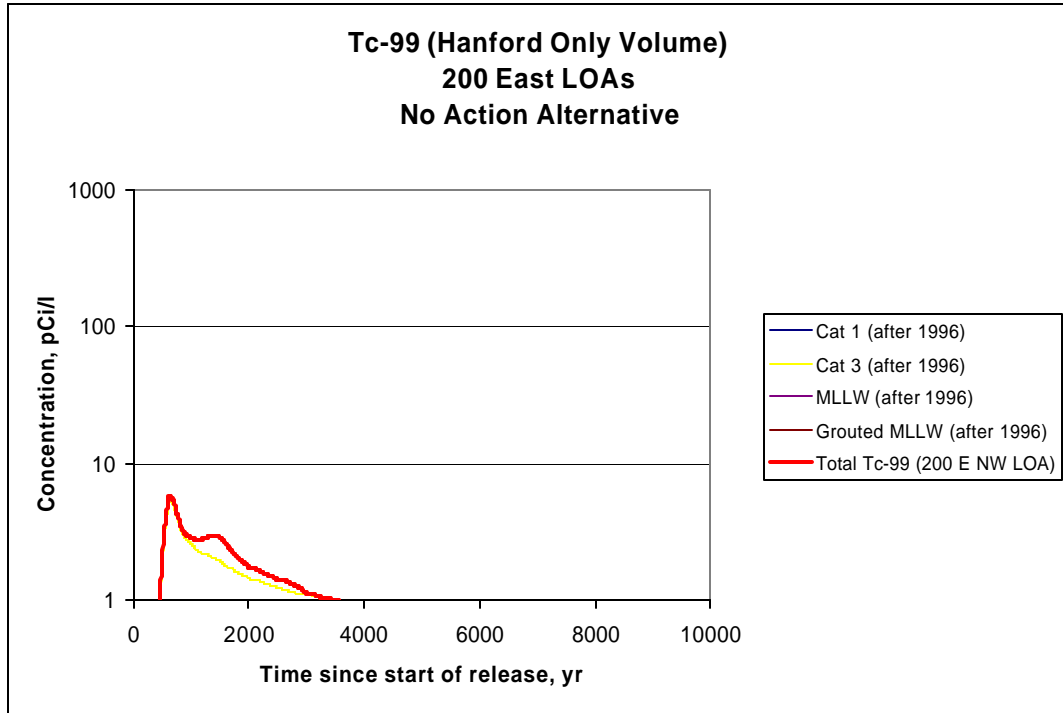


Figure G.87. Tc-99 and I-129 Concentration Profiles at the 200 East LOAs (No Action Alternative – Hanford Only Wastes Disposed of After 1995)

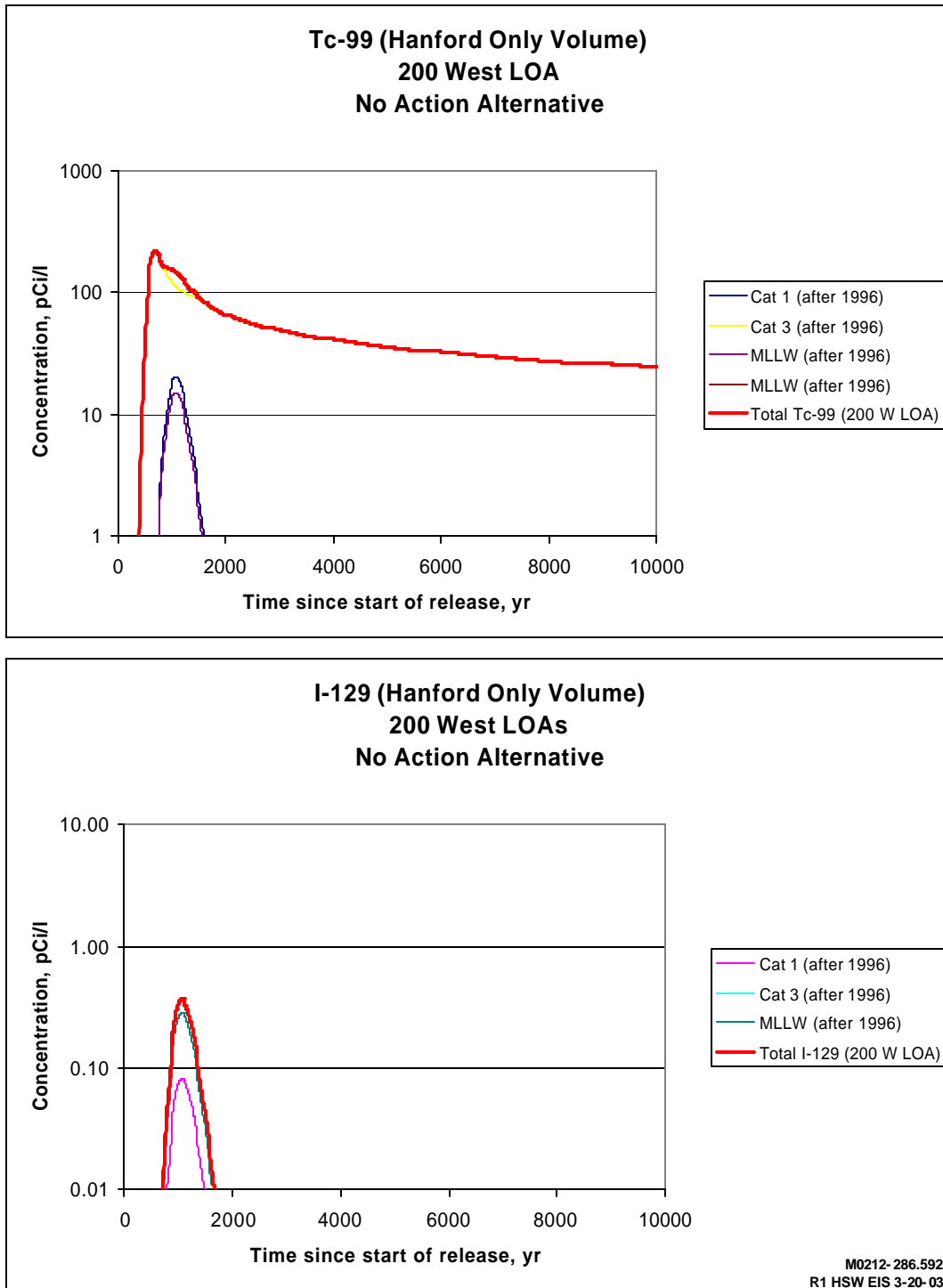


Figure G.88. Tc-99 and I-129 Concentration Profiles at the 200 West LOA (No Action Alternative – Hanford Only Wastes Disposed of After 1995)

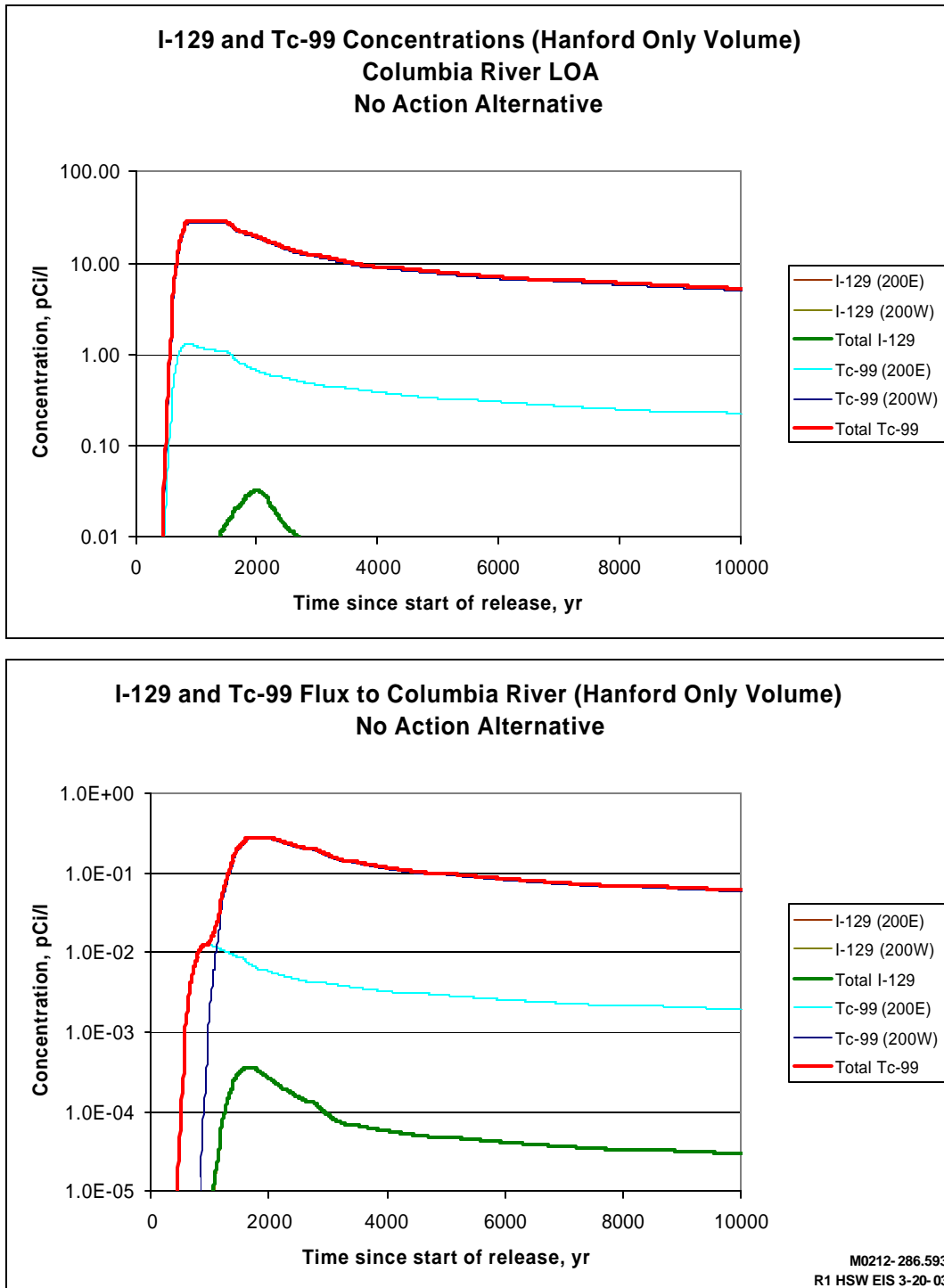


Figure G.89. I-129 and Tc-99 Concentration and River Flux Profiles Along the Columbia River LOA
(No Action Alternative – Hanford Only Wastes Disposed of After 1995)

Table G.8. Predicted Peak Concentrations of Key Constituents by Waste Type and Category at a 1-km Line of Analysis, Alternative Group A

| Constituent | Benchmark Drinking Water Standard (pCi/L) | Hanford Only Volume | | | Lower Bound Volume | | | Upper Bound Volume | | |
|---------------------|---|---------------------|-------------------------------|---------------------------------|--------------------|-------------------------------|---------------------------------|--------------------|-------------------------------|---------------------------------|
| | | Inventory (Ci) | Maximum Concentration (pCi/L) | Approx. Peak Arrival Time (yrs) | Inventory (Ci) | Maximum Concentration (pCi/L) | Approx. Peak Arrival Time (yrs) | Inventory (Ci) | Maximum Concentration (pCi/L) | Approx. Peak Arrival Time (yrs) |
| 1996-2007 Cat 1 LLW | | | | | | | | | | |
| 200 East Area | | | | | | | | | | |
| C-14 | 2000 | 0.00E+00 | | | 0.00E+00 | | | 0.00E+00 | | |
| Tc-99 | 900 | 0.00E+00 | | | 0.00E+00 | | | 0.00E+00 | | |
| Grouted Tc-99 | 900 | 0.00E+00 | | | 0.00E+00 | | | 0.00E+00 | | |
| I-129 | 1 | 0.00E+00 | | | 0.00E+00 | | | 0.00E+00 | | |
| Grouted I-129 | 1 | 0.00E+00 | | | 0.00E+00 | | | 0.00E+00 | | |
| U-233 | (a) | 0.00E+00 | | | 0.00E+00 | | | 0.00E+00 | | |
| U-234 | (a) | 0.00E+00 | | | 0.00E+00 | | | 0.00E+00 | | |
| U-235 | (a) | 0.00E+00 | | | 0.00E+00 | | | 0.00E+00 | | |
| U-236 | (a) | 0.00E+00 | | | 0.00E+00 | | | 0.00E+00 | | |
| U-238 | (a) | 0.00E+00 | | | 0.00E+00 | | | 0.00E+00 | | |
| 200 West Area | | 0.00E+00 | | | | | | | | |
| C-14 | 2000 | 3.33E+00 | 0.00E+00 | >10000 | 4.06E+00 | 0.00E+00 | >10000 | 5.21E+00 | 0.00E+00 | >10000 |
| Tc-99 | 900 | 3.00E-01 | 3.00E+00 | 1700 | 3.66E-01 | 3.66E+00 | 1700 | 3.99E-01 | 3.99E+00 | 1700 |
| Grouted Tc-99 | 900 | 0.00E+00 | | | 0.00E+00 | | | 0.00E+00 | | |
| I-129 | 1 | 2.62E-03 | 2.63E-02 | 1700 | 3.20E-03 | 3.20E-02 | 1700 | 3.20E-03 | 3.20E-02 | 1700 |
| Grouted I-129 | 1 | 0.00E+00 | | | 0.00E+00 | | | 0.00E+00 | | |
| U-233 | (a) | 1.03E-01 | 0.00E+00 | >10000 | 1.25E-01 | 0.00E+00 | >10000 | 1.25E-01 | 0.00E+00 | >10000 |
| U-234 | (a) | 1.70E-01 | 0.00E+00 | >10000 | 2.07E-01 | 0.00E+00 | >10000 | 9.01E-01 | 0.00E+00 | >10000 |
| U-235 | (a) | 3.56E-02 | 0.00E+00 | >10000 | 4.34E-02 | 0.00E+00 | >10000 | 8.86E-02 | 0.00E+00 | >10000 |
| U-236 | (a) | 4.03E-03 | 0.00E+00 | >10000 | 4.92E-03 | 0.00E+00 | >10000 | 4.92E-03 | 0.00E+00 | >10000 |
| U-238 | (a) | 4.06E-01 | 0.00E+00 | >10000 | 4.95E-01 | 0.00E+00 | >10000 | 1.66E+00 | 0.00E+00 | >10000 |
| 1996-2007 Cat 3 LLW | | | | | | | | | | |
| 200 East Area | | | | | | | | | | |
| C-14 | 2000 | 0.00E+00 | | | 0.00E+00 | | | 0.00E+00 | | |
| Tc-99 | 900 | 0.00E+00 | | | 0.00E+00 | | | 0.00E+00 | | |
| Grouted Tc-99 | 900 | 0.00E+00 | | | 0.00E+00 | | | 0.00E+00 | | |
| I-129 | 1 | 0.00E+00 | | | 0.00E+00 | | | 0.00E+00 | | |
| Grouted I-129 | 1 | 0.00E+00 | | | 0.00E+00 | | | 0.00E+00 | | |
| U-233 | (a) | 0.00E+00 | | | 0.00E+00 | | | 0.00E+00 | | |
| U-234 | (a) | 0.00E+00 | | | 0.00E+00 | | | 0.00E+00 | | |
| U-235 | (a) | 0.00E+00 | | | 0.00E+00 | | | 0.00E+00 | | |
| U-236 | (a) | 0.00E+00 | | | 0.00E+00 | | | 0.00E+00 | | |
| U-238 | (a) | 0.00E+00 | | | 0.00E+00 | | | 0.00E+00 | | |
| 200 West Area | | | | | | | | | | |
| C-14 | 2000 | 1.48E-01 | 0.00E+00 | >10000 | 1.54E-01 | 0.00E+00 | >10000 | 3.50E-01 | 0.00E+00 | >10000 |
| Tc-99 | 900 | 0.00E+00 | | | 0.00E+00 | | | 0.00E+00 | | |
| Grouted Tc-99 | 900 | 7.20E+01 | 6.64E+00 | 1230 | 7.20E+01 | 6.64E+00 | 1230 | 7.20E+01 | 6.64E+00 | 1230 |
| I-129 | 1 | 3.39E-07 | 3.39E-06 | 1700 | 3.53E-07 | 3.53E-06 | 1700 | 3.53E-07 | 3.53E-06 | 1700 |
| Grouted I-129 | 1 | 0.00E+00 | | | 0.00E+00 | | | 0.00E+00 | | |
| U-233 | (a) | 9.79E-02 | 0.00E+00 | >10000 | 1.02E-01 | 0.00E+00 | >10000 | 2.32E-01 | 0.00E+00 | >10000 |
| U-234 | (a) | 1.24E+02 | 0.00E+00 | >10000 | 1.29E+02 | 0.00E+00 | >10000 | 2.94E+02 | 0.00E+00 | >10000 |
| U-235 | (a) | 3.54E+00 | 0.00E+00 | >10000 | 3.69E+00 | 0.00E+00 | >10000 | 8.39E+00 | 0.00E+00 | >10000 |
| U-236 | (a) | 1.60E+01 | 0.00E+00 | >10000 | 1.67E+01 | 0.00E+00 | >10000 | 3.80E+01 | 0.00E+00 | >10000 |
| U-238 | (a) | 1.99E+02 | 0.00E+00 | >10000 | 2.07E+02 | 0.00E+00 | >10000 | 4.72E+02 | 0.00E+00 | >10000 |

Table G8. (contd)

| Constituent | Benchmark Drinking Water Standard (pCi/L) | Hanford Only Volume | | | Lower Bound Volume | | | Upper Bound Volume | | |
|--------------------------------|---|---------------------|-------------------------------|---------------------------------|--------------------|-------------------------------|---------------------------------|--------------------|-------------------------------|---------------------------------|
| | | Inventory (Ci) | Maximum Concentration (pCi/L) | Approx. Peak Arrival Time (yrs) | Inventory (Ci) | Maximum Concentration (pCi/L) | Approx. Peak Arrival Time (yrs) | Inventory (Ci) | Maximum Concentration (pCi/L) | Approx. Peak Arrival Time (yrs) |
| 1996-2007 Mixed LLW | | | | | | | | | | |
| 200 East Area | | | | | | | | | | |
| C-14 | 2000 | 0.00E+00 | | | 0.00E+00 | | | 1.60E+00 | 1.27E-02 | 10000 |
| Tc-99 | 900 | 0.00E+00 | | | 0.00E+00 | | | 1.43E+00 | 1.18E+01 | 1230 |
| Grouted Tc-99 | 900 | 0.00E+00 | | | 0.00E+00 | | | 1.23E+02 | 8.66E+00 | 680 |
| I-129 | 1 | 0.00E+00 | | | 0.00E+00 | | | 1.68E-02 | 1.39E-01 | 1230 |
| Grouted I-129 | 1 | 0.00E+00 | | | 0.00E+00 | | | 0.00E+00 | | |
| U-233 | (a) | 0.00E+00 | | | 0.00E+00 | | | 2.22E-03 | 5.18E-05 | 10000 |
| U-234 | (a) | 0.00E+00 | | | 0.00E+00 | | | 2.25E+02 | 5.24E+00 | 10000 |
| U-235 | (a) | 0.00E+00 | | | 0.00E+00 | | | 9.96E+00 | 2.32E-01 | 10000 |
| U-236 | (a) | 0.00E+00 | | | 0.00E+00 | | | 4.86E-02 | 1.13E-03 | 10000 |
| U-238 | (a) | 0.00E+00 | | | 0.00E+00 | | | 2.33E+02 | 5.43E+00 | 10000 |
| 200 West Area | | | | | | | | | | |
| C-14 | 2000 | 1.46E+00 | 0.00E+00 | >10000 | 1.46E+00 | 0.00E+00 | >10000 | 1.13E+00 | 0.00E+00 | >10000 |
| Tc-99 | 900 | 3.43E+00 | 3.44E+01 | 1700 | 3.44E+00 | 3.44E+01 | 1700 | 2.09E+00 | 2.09E+01 | 1700 |
| Grouted Tc-99 | 900 | 4.91E+00 | 3.50E-01 | 1200 | 4.92E+00 | 3.51E-01 | 1200 | 5.96E+01 | 4.25E+00 | 1200 |
| I-129 | 1 | 3.50E-02 | 3.51E-01 | 1700 | 3.51E-02 | 3.51E-01 | 1700 | 1.70E-02 | 1.70E-01 | 1700 |
| Grouted I-129 | 1 | 0.00E+00 | | | 0.00E+00 | | | 0.00E+00 | | |
| U-233 | (a) | 4.59E-03 | 0.00E+00 | >10000 | 4.60E-03 | 0.00E+00 | >10000 | 2.20E-03 | 0.00E+00 | >10000 |
| U-234 | (a) | 5.44E+00 | 0.00E+00 | >10000 | 5.45E+00 | 0.00E+00 | >10000 | 1.09E+02 | 0.00E+00 | >10000 |
| U-235 | (a) | 8.68E-02 | 0.00E+00 | >10000 | 8.70E-02 | 0.00E+00 | >10000 | 4.78E+00 | 0.00E+00 | >10000 |
| U-236 | (a) | 1.02E-01 | 0.00E+00 | >10000 | 1.02E-01 | 0.00E+00 | >10000 | 4.88E-02 | 0.00E+00 | >10000 |
| U-238 | (a) | 1.36E+00 | 0.00E+00 | >10000 | 1.36E+00 | 0.00E+00 | >10000 | 1.12E+02 | 0.00E+00 | >10000 |
| Projected Cat 1 LLW After 2008 | | | | | | | | | | |
| 200 East Area | | | | | | | | | | |
| C-14 | 2000 | 0.00E+00 | | | 0.00E+00 | | | 0.00E+00 | | |
| Tc-99 | 900 | 0.00E+00 | | | 0.00E+00 | | | 0.00E+00 | | |
| Grouted Tc-99 | 900 | 0.00E+00 | | | 0.00E+00 | | | 0.00E+00 | | |
| I-129 | 1 | 0.00E+00 | | | 0.00E+00 | | | 0.00E+00 | | |
| Grouted I-129 | 1 | 0.00E+00 | | | 0.00E+00 | | | 0.00E+00 | | |
| U-233 | (a) | 0.00E+00 | | | 0.00E+00 | | | 0.00E+00 | | |
| U-234 | (a) | 0.00E+00 | | | 0.00E+00 | | | 0.00E+00 | | |
| U-235 | (a) | 0.00E+00 | | | 0.00E+00 | | | 0.00E+00 | | |
| U-236 | (a) | 0.00E+00 | | | 0.00E+00 | | | 0.00E+00 | | |
| U-238 | (a) | 0.00E+00 | | | 0.00E+00 | | | 0.00E+00 | | |
| 200 West Area | | | | | | | | | | |
| C-14 | 2000 | 1.28E+01 | 0.00E+00 | >10000 | 1.56E+01 | 0.00E+00 | >10000 | 1.59E+01 | 0.00E+00 | >10000 |
| Tc-99 | 900 | 1.08E+00 | 8.98E+00 | 1910 | 1.32E+00 | 1.09E+01 | 1910 | 1.33E+00 | 1.10E+01 | 1910 |
| Grouted Tc-99 | 900 | 0.00E+00 | | | 0.00E+00 | 0.00E+00 | | 0.00E+00 | | |
| I-129 | 1 | 3.01E-03 | 2.50E-02 | 1910 | 3.67E-03 | 3.04E-02 | 1910 | 3.67E-03 | 3.04E-02 | 1910 |
| Grouted I-129 | 1 | 0.00E+00 | | | 0.00E+00 | 0.00E+00 | | 0.00E+00 | | |
| U-233 | (a) | 3.71E-01 | 0.00E+00 | >10000 | 4.52E-01 | 0.00E+00 | >10000 | 4.52E-01 | 0.00E+00 | >10000 |
| U-234 | (a) | 6.13E-01 | 0.00E+00 | >10000 | 7.47E-01 | 0.00E+00 | >10000 | 9.21E-01 | 0.00E+00 | >10000 |
| U-235 | (a) | 1.29E-01 | 0.00E+00 | >10000 | 1.57E-01 | 0.00E+00 | >10000 | 1.68E-01 | 0.00E+00 | >10000 |
| U-236 | (a) | 1.46E-02 | 0.00E+00 | >10000 | 1.78E-02 | 0.00E+00 | >10000 | 1.78E-02 | 0.00E+00 | >10000 |
| U-238 | (a) | 1.47E+00 | 0.00E+00 | >10000 | 1.79E+00 | 0.00E+00 | >10000 | 2.08E+00 | 0.00E+00 | >10000 |

Table G8. (contd)

| Constituent | Benchmark Drinking Water Standard (pCi/L) | Hanford Only Volume | | | Lower Bound Volume | | | Upper Bound Volume | | |
|---------------------------------|--|---------------------|--|---|--------------------|--|---|--------------------|--|---|
| | | Inventory (Ci) | Maximum Concen- tration (pCi/L) | Approx. Peak Arrival Time (yrs) | Inventory (Ci) | Maximum Concen- tration (pCi/L) | Approx. Peak Arrival Time (yrs) | Inventory (Ci) | Maximum Concen- tration (pCi/L) | Approx. Peak Arrival Time (yrs) |
| Projecte d Cat 3 LLW After 2008 | | | | | | | | | | |
| 200 East Area | | | | | | | | | | |
| C-14 | 2000 | 0.00E+00 | | | 0.00E+00 | | | 0.00E+00 | | |
| Tc-99 | 900 | 0.00E+00 | | | 0.00E+00 | | | 0.00E+00 | | |
| Grouted Tc-99 | 900 | 0.00E+00 | | | 0.00E+00 | | | 0.00E+00 | | |
| I-129 | 1 | 0.00E+00 | | | 0.00E+00 | | | 0.00E+00 | | |
| Grouted I-129 | 1 | 0.00E+00 | | | 0.00E+00 | | | 0.00E+00 | | |
| U-233 | (a) | 0.00E+00 | | | 0.00E+00 | | | 0.00E+00 | | |
| U-234 | (a) | 0.00E+00 | | | 0.00E+00 | | | 0.00E+00 | | |
| U-235 | (a) | 0.00E+00 | | | 0.00E+00 | | | 0.00E+00 | | |
| U-236 | (a) | 0.00E+00 | | | 0.00E+00 | | | 0.00E+00 | | |
| U-238 | (a) | 0.00E+00 | | | 0.00E+00 | | | 0.00E+00 | | |
| 200 West Area | | | | | | | | | | |
| C-14 | 2000 | 4.44E-01 | 0.00E+00 | >10000 | 4.62E-01 | 0.00E+00 | >10000 | 1.45E+02 | 0.00E+00 | >10000 |
| Tc-99 | 900 | 0.00E+00 | | | 0.00E+00 | | | 0.00E+00 | | |
| Grouted Tc-99 | 900 | 3.23E+03 | 2.98E+02 | 1230 | 3.23E+03 | 2.98E+02 | 1230 | 3.23E+03 | 2.98E+02 | 1230 |
| I-129 | 1 | 1.96E-06 | 1.62E-05 | 1910 | 2.04E-06 | 1.62E-05 | 1910 | 2.04E-06 | 1.69E-05 | 1910 |
| Grouted I-129 | 1 | 5.00E+00 | 1.46E-01 | 1230 | 5.00E+00 | 1.46E-01 | 1230 | 5.00E+00 | 1.46E-01 | 1230 |
| U-233 | (a) | 2.98E-01 | 0.00E+00 | >10000 | 3.10E-01 | 0.00E+00 | >10000 | 1.80E-01 | 0.00E+00 | >10000 |
| U-234 | (a) | 3.73E+02 | 0.00E+00 | >10000 | 3.89E+02 | 0.00E+00 | >10000 | 3.11E+02 | 0.00E+00 | >10000 |
| U-235 | (a) | 1.07E+01 | 0.00E+00 | >10000 | 1.11E+01 | 0.00E+00 | >10000 | 1.20E+01 | 0.00E+00 | >10000 |
| U-236 | (a) | 4.82E+01 | 0.00E+00 | >10000 | 5.02E+01 | 0.00E+00 | >10000 | 2.89E+01 | 0.00E+00 | >10000 |
| U-238 | (a) | 5.99E+02 | 0.00E+00 | >10000 | 6.24E+02 | 0.00E+00 | >10000 | 5.04E+02 | 0.00E+00 | >10000 |
| Projected Mixed LLW After 2008 | | | | | | | | | | |
| 200 East Area | | | | | | | | | | |
| C-14 | 2000 | 4.32E+00 | 5.28E+01 | 10000 | 4.33E+00 | 1.01E-02 | 10000 | 5.70E+00 | 1.34E-02 | 10000 |
| Tc-99 | 900 | 8.34E+00 | 6.79E+01 | 1370 | 8.36E+00 | 6.80E+01 | 1370 | 8.27E+00 | 6.73E+01 | 1370 |
| Grouted Tc-99 | 900 | 1.57E+02 | 1.10E+01 | 680 | 1.57E+02 | 1.11E+01 | 680 | 3.34E+02 | 2.35E+01 | 680 |
| I-129 | 1 | 1.04E-01 | 8.44E-01 | 1370 | 1.04E-01 | 8.46E-01 | 1370 | 1.05E-01 | 8.56E-01 | 1370 |
| Grouted I-129 | 1 | 0.00E+00 | | | 0.00E+00 | | | 0.00E+00 | | |
| U-233 | (a) | 1.36E-02 | 4.14E-08 | 10000 | 1.36E-02 | 4.15E-08 | 10000 | 1.38E-02 | 4.20E-08 | 10000 |
| U-234 | (a) | 1.61E+01 | 4.91E-05 | 10000 | 1.61E+01 | 4.92E-05 | 10000 | 3.40E+02 | 1.04E-03 | 10000 |
| U-235 | (a) | 2.56E-01 | 7.82E-07 | 10000 | 2.57E-01 | 7.83E-07 | 10000 | 1.46E+01 | 4.46E-05 | 10000 |
| U-236 | (a) | 3.01E-01 | 9.19E-07 | 10000 | 3.02E-01 | 9.20E-07 | 10000 | 3.05E-01 | 9.31E-07 | 10000 |
| U-238 | (a) | 4.00E+00 | 1.22E-05 | 10000 | 4.01E+00 | 1.22E-05 | 10000 | 3.44E+02 | 1.05E-03 | 10000 |
| 200 West Area | | | | | | | | | | |
| C-14 | 2000 | 0.00E+00 | | | 0.00E+00 | | | 0.00E+00 | | |
| Tc-99 | 900 | 0.00E+00 | | | 0.00E+00 | | | 0.00E+00 | | |
| Grouted Tc-99 | 900 | 0.00E+00 | | | 0.00E+00 | | | 0.00E+00 | | |
| I-129 | 1 | 0.00E+00 | | | 0.00E+00 | | | 0.00E+00 | | |
| Grouted I-129 | 1 | 0.00E+00 | | | 0.00E+00 | | | 0.00E+00 | | |
| U-233 | (a) | 0.00E+00 | | | 0.00E+00 | | | 0.00E+00 | | |
| U-234 | (a) | 0.00E+00 | | | 0.00E+00 | | | 0.00E+00 | | |
| U-235 | (a) | 0.00E+00 | | | 0.00E+00 | | | 0.00E+00 | | |
| U-236 | (a) | 0.00E+00 | | | 0.00E+00 | | | 0.00E+00 | | |
| U-238 | (a) | 0.00E+00 | | | 0.00E+00 | | | 0.00E+00 | | |

Table G8. (contd)

| Constituent | Benchmark Drinking Water Standard (pCi/L) | Hanford Only Volume | | | Lower Bound Volume | | | Upper Bound Volume | | |
|--|--|---------------------|--|---|--------------------|--|---|--------------------|--|---|
| | | Inventory (Ci) | Maximum Concen- tration (pCi/L) | Approx. Peak Arrival Time (yrs) | Inventory (Ci) | Maximum Concen- tration (pCi/L) | Approx. Peak Arrival Time (yrs) | Inventory (Ci) | Maximum Concen- tration (pCi/L) | Approx. Peak Arrival Time (yrs) |
| Projected Melter Waste | | | | | | | | | | |
| 200 East Area | | | | | | | | | | |
| C-14 | 2000 | 0.00E+00 | | | 0.00E+00 | | | 0.00E+00 | | |
| Tc-99 | 900 | 0.00E+00 | | | 0.00E+00 | | | 0.00E+00 | | |
| Grouted Tc-99 | 900 | 3.89E+01 | 2.74E+00 | 680 | 3.89E+01 | 2.74E+00 | 680 | 3.89E+01 | 2.74E+00 | 680 |
| I-129 | 1 | 0.00E+00 | | | 0.00E+00 | | | 0.00E+00 | | |
| Grouted I-129 | 1 | 0.00E+00 | | | 0.00E+00 | | | 0.00E+00 | | |
| U-233 | (a) | 8.49E-01 | 1.74E-03 | 10000 | 8.49E-01 | 1.74E-03 | 10000 | 8.49E-01 | 1.74E-03 | 10000 |
| U-234 | (a) | 4.60E-01 | 9.43E-04 | 10000 | 4.60E-01 | 9.43E-04 | 10000 | 4.60E-01 | 9.43E-04 | 10000 |
| U-235 | (a) | 1.90E-02 | 3.89E-05 | 10000 | 1.90E-02 | 3.89E-05 | 10000 | 1.90E-02 | 3.89E-05 | 10000 |
| U-236 | (a) | 1.70E-02 | 3.48E-05 | 10000 | 1.70E-02 | 3.48E-05 | 10000 | 1.70E-02 | 3.48E-05 | 10000 |
| U-238 | (a) | 4.10E-01 | 8.40E-04 | 10000 | 4.10E-01 | 8.40E-04 | 10000 | 4.10E-01 | 8.40E-04 | 10000 |
| 200 West Area | | | | | | | | | | |
| C-14 | 2000 | 0.00E+00 | | | 0.00E+00 | | | 0.00E+00 | | |
| Tc-99 | 900 | 0.00E+00 | | | 0.00E+00 | | | 0.00E+00 | | |
| Grouted Tc-99 | 900 | 0.00E+00 | | | 0.00E+00 | | | 0.00E+00 | | |
| I-129 | 1 | 0.00E+00 | | | 0.00E+00 | | | 0.00E+00 | | |
| Grouted I-129 | 1 | 0.00E+00 | | | 0.00E+00 | | | 0.00E+00 | | |
| U-233 | (a) | 0.00E+00 | | | 0.00E+00 | | | 0.00E+00 | | |
| U-234 | (a) | 0.00E+00 | | | 0.00E+00 | | | 0.00E+00 | | |
| U-235 | (a) | 0.00E+00 | | | 0.00E+00 | | | 0.00E+00 | | |
| U-236 | (a) | 0.00E+00 | | | 0.00E+00 | | | 0.00E+00 | | |
| U-238 | (a) | 0.00E+00 | | | 0.00E+00 | | | 0.00E+00 | | |
| (a) The benchmark groundwater standard for uranium is 30 µg/L expressed as total uranium. To convert isotope specific concentrations from pCi/L to µg/L, use following conversion factors: | | | | | | | | | | |
| • Uranium-233 - 1.05E-04 | | | | | | | | | | |
| • Uranium-234 - 1.62E-04 | | | | | | | | | | |
| • Uranium-235 - 4.66E-01 | | | | | | | | | | |
| • Uranium-236 - 1.58E-02 | | | | | | | | | | |
| • Uranium-238 - 3.00E+00. | | | | | | | | | | |

Table G.9. Predicted Peak Concentrations of Key Constituents by Waste Type and Category at a Line of Analysis Along the Columbia River, Alternative Group A

| Constituent | Benchmark Drinking Water Standard (pCi/L) | Hanford Only Volume | | | Lower Bound Volume | | | Upper Bound Volume | | |
|---------------------|---|---------------------|-------------------------------|---------------------------------|--------------------|-------------------------------|---------------------------------|--------------------|-------------------------------|---------------------------------|
| | | Inventory (Ci) | Maximum Concentration (pCi/L) | Approx. Peak Arrival Time (yrs) | Inventory (Ci) | Maximum Concentration (pCi/L) | Approx. Peak Arrival Time (yrs) | Inventory (Ci) | Maximum Concentration (pCi/L) | Approx. Peak Arrival Time (yrs) |
| 1996-2007 Cat 1 LLW | | | | | | | | | | |
| 200 East Area | | | | | | | | | | |
| C-14 | 2000 | 0.00E+00 | | | 0.00E+00 | | | 0.00E+00 | | |
| Tc-99 | 900 | 0.00E+00 | | | 0.00E+00 | | | 0.00E+00 | | |
| Grouted Tc-99 | 900 | 0.00E+00 | | | 0.00E+00 | | | 0.00E+00 | | |
| I-129 | 1 | 0.00E+00 | | | 0.00E+00 | | | 0.00E+00 | | |
| Grouted I-129 | 1 | 0.00E+00 | | | 0.00E+00 | | | 0.00E+00 | | |
| U-233 | (a) | 0.00E+00 | | | 0.00E+00 | | | 0.00E+00 | | |
| U-234 | (a) | 0.00E+00 | | | 0.00E+00 | | | 0.00E+00 | | |
| U-235 | (a) | 0.00E+00 | | | 0.00E+00 | | | 0.00E+00 | | |
| U-236 | (a) | 0.00E+00 | | | 0.00E+00 | | | 0.00E+00 | | |
| U-238 | (a) | 0.00E+00 | | | 0.00E+00 | | | 0.00E+00 | | |
| 200 West Area | | | | | | | | | | |
| C-14 | 2000 | 3.33E+00 | 0.00E+00 | >10000 | 4.06E+00 | 0.00E+00 | >10000 | 5.21E+00 | 0.00E+00 | >10000 |
| Tc-99 | 900 | 3.00E-01 | 2.63E-01 | 2000 | 3.66E-01 | 3.21E-01 | 2000 | 3.99E-01 | 3.50E-01 | 2000 |
| Grouted Tc-99 | 900 | 0.00E+00 | | | 0.00E+00 | | | 0.00E+00 | | |
| I-129 | 1 | 2.62E-03 | 2.30E-03 | 2000 | 3.20E-03 | 2.81E-03 | 2000 | 3.20E-03 | 2.81E-03 | 2000 |
| Grouted I-129 | 1 | 0.00E+00 | | | 0.00E+00 | | | 0.00E+00 | | |
| U-233 | (a) | 1.03E-01 | 0.00E+00 | >10000 | 1.25E-01 | 0.00E+00 | >10000 | 1.25E-01 | 0.00E+00 | >10000 |
| U-234 | (a) | 1.70E-01 | 0.00E+00 | >10000 | 2.07E-01 | 0.00E+00 | >10000 | 9.01E-01 | 0.00E+00 | >10000 |
| U-235 | (a) | 3.56E-02 | 0.00E+00 | >10000 | 4.34E-02 | 0.00E+00 | >10000 | 8.86E-02 | 0.00E+00 | >10000 |
| U-236 | (a) | 4.03E-03 | 0.00E+00 | >10000 | 4.92E-03 | 0.00E+00 | >10000 | 4.92E-03 | 0.00E+00 | >10000 |
| U-238 | (a) | 4.06E-01 | 0.00E+00 | >10000 | 4.95E-01 | 0.00E+00 | >10000 | 1.66E+00 | 0.00E+00 | >10000 |
| 1996-2007 Cat 3 LLW | | | | | | | | | | |
| 200 East Area | | | | | | | | | | |
| C-14 | 2000 | 0.00E+00 | | | 0.00E+00 | | | 0.00E+00 | | |
| Tc-99 | 900 | 0.00E+00 | | | 0.00E+00 | | | 0.00E+00 | | |
| Grouted Tc-99 | 900 | 0.00E+00 | | | 0.00E+00 | | | 0.00E+00 | | |
| I-129 | 1 | 0.00E+00 | | | 0.00E+00 | | | 0.00E+00 | | |
| Grouted I-129 | 1 | 0.00E+00 | | | 0.00E+00 | | | 0.00E+00 | | |
| U-233 | (a) | 0.00E+00 | | | 0.00E+00 | | | 0.00E+00 | | |
| U-234 | (a) | 0.00E+00 | | | 0.00E+00 | | | 0.00E+00 | | |
| U-235 | (a) | 0.00E+00 | | | 0.00E+00 | | | 0.00E+00 | | |
| U-236 | (a) | 0.00E+00 | | | 0.00E+00 | | | 0.00E+00 | | |
| U-238 | (a) | 0.00E+00 | | | 0.00E+00 | | | 0.00E+00 | | |
| 200 West Area | | | | | | | | | | |
| C-14 | 2000 | 1.48E-01 | 0.00E+00 | >10000 | 0.00E+00 | | | 3.50E-01 | 0.00E+00 | >10000 |
| Tc-99 | 900 | 0.00E+00 | | | 7.20E+01 | | | 0.00E+00 | | |
| Grouted Tc-99 | 900 | 7.20E+01 | 4.62E-01 | 1710 | 3.53E-07 | 4.62E-01 | 1710 | 7.20E+01 | 4.62E-01 | 1710 |
| I-129 | 1 | 3.39E-07 | 2.97E-07 | 2000 | 0.00E+00 | 3.09E-07 | 2000 | 3.53E-07 | 3.09E-07 | 2000 |
| Grouted I-129 | 1 | 0.00E+00 | | | 1.02E-01 | | | 0.00E+00 | | |
| U-233 | (a) | 9.79E-02 | 0.00E+00 | >10000 | 1.29E+02 | 0.00E+00 | >10000 | 2.32E-01 | 0.00E+00 | >10000 |
| U-234 | (a) | 1.24E+02 | 0.00E+00 | >10000 | 3.69E+00 | 0.00E+00 | >10000 | 2.94E+02 | 0.00E+00 | >10000 |
| U-235 | (a) | 3.54E+00 | 0.00E+00 | >10000 | 1.67E+01 | 0.00E+00 | >10000 | 8.39E+00 | 0.00E+00 | >10000 |
| U-236 | (a) | 1.60E+01 | 0.00E+00 | >10000 | 2.07E+02 | 0.00E+00 | >10000 | 3.80E+01 | 0.00E+00 | >10000 |
| U-238 | (a) | 1.99E+02 | 0.00E+00 | >10000 | 0.00E+00 | 0.00E+00 | >10000 | 4.72E+02 | 0.00E+00 | >10000 |

Table G9. (contd)

| Constituent | Benchmark Drinking Water Standard (pCi/L) | Hanford Only Volume | | | Lower Bound Volume | | | Upper Bound Volume | | |
|--------------------------------|--|---------------------|--|---|--------------------|--|---|--------------------|--|---|
| | | Inventory (Ci) | Maximum Concen- tration (pCi/L) | Approx. Peak Arrival Time (yrs) | Inventory (Ci) | Maximum Concen- tration (pCi/L) | Approx. Peak Arrival Time (yrs) | Inventory (Ci) | Maximum Concen- tration (pCi/L) | Approx. Peak Arrival Time (yrs) |
| 1996-2007 Mixed LLW | | | | | | | | | | |
| 200 East Area | | | | | | | | | | |
| C-14 | 2000 | 0.00E+00 | | | 0.00E+00 | | | 1.60E+00 | 1.18E-03 | 10000 |
| Tc-99 | 900 | 0.00E+00 | | | 0.00E+00 | | | 1.43E+00 | 2.24E+00 | 800 |
| Grouted Tc-99 | 900 | 0.00E+00 | | | 0.00E+00 | | | 1.23E+02 | 1.06E+00 | 940 |
| I-129 | 1 | 0.00E+00 | | | 0.00E+00 | | | 1.68E-02 | 2.63E-02 | 800 |
| Grouted I-129 | 1 | 0.00E+00 | | | 0.00E+00 | | | 0.00E+00 | | |
| U-233 | (a) | 0.00E+00 | | | 0.00E+00 | | | 2.22E-03 | 1.61E-06 | 10000 |
| U-234 | (a) | 0.00E+00 | | | 0.00E+00 | | | 2.25E+02 | 1.63E-01 | 10000 |
| U-235 | (a) | 0.00E+00 | | | 0.00E+00 | | | 9.96E+00 | 7.21E-03 | 10000 |
| U-236 | (a) | 0.00E+00 | | | 0.00E+00 | | | 4.86E-02 | 3.52E-05 | 10000 |
| U-238 | (a) | 0.00E+00 | | | 0.00E+00 | | | 2.33E+02 | 1.69E-01 | 10000 |
| 200 West Area | | | | | | | | | | |
| C-14 | 2000 | 1.46E+00 | 0.00E+00 | >10000 | 1.46E+00 | 0.00E+00 | >10000 | 1.13E+00 | 0.00E+00 | >10000 |
| Tc-99 | 900 | 3.43E+00 | 3.01E+00 | 2000 | 3.44E+00 | 3.02E+00 | 2000 | 2.09E+00 | 1.83E+00 | 2000 |
| Grouted Tc-99 | 900 | 4.91E+00 | 3.36E-02 | 1620 | 4.92E+00 | 3.37E-02 | 1620 | 5.96E+01 | 4.08E-01 | 1620 |
| I-129 | 1 | 3.50E-02 | 3.07E-02 | 2000 | 3.51E-02 | 3.08E-02 | 2000 | 1.70E-02 | 1.49E-02 | 2000 |
| Grouted I-129 | 1 | 0.00E+00 | | | 0.00E+00 | | | 0.00E+00 | | |
| U-233 | (a) | 4.59E-03 | 0.00E+00 | >10000 | 4.60E-03 | 0.00E+00 | >10000 | 2.20E-03 | 0.00E+00 | >10000 |
| U-234 | (a) | 5.44E+00 | 0.00E+00 | >10000 | 5.45E+00 | 0.00E+00 | >10000 | 1.09E+02 | 0.00E+00 | >10000 |
| U-235 | (a) | 8.68E-02 | 0.00E+00 | >10000 | 8.70E-02 | 0.00E+00 | >10000 | 4.78E+00 | 0.00E+00 | >10000 |
| U-236 | (a) | 1.02E-01 | 0.00E+00 | >10000 | 1.02E-01 | 0.00E+00 | >10000 | 4.88E-02 | 0.00E+00 | >10000 |
| U-238 | (a) | 1.36E+00 | 0.00E+00 | >10000 | 1.36E+00 | 0.00E+00 | >10000 | 1.12E+02 | 0.00E+00 | >10000 |
| Projected Cat 1 LLW After 2008 | | | | | | | | | | |
| 200 East Area | | | | | | | | | | |
| C-14 | 2000 | 0.00E+00 | | | 0.00E+00 | | | 0.00E+00 | | |
| Tc-99 | 900 | 0.00E+00 | | | 0.00E+00 | | | 0.00E+00 | | |
| Grouted Tc-99 | 900 | 0.00E+00 | | | 0.00E+00 | | | 0.00E+00 | | |
| I-129 | 1 | 0.00E+00 | | | 0.00E+00 | | | 0.00E+00 | | |
| Grouted I-129 | 1 | 0.00E+00 | | | 0.00E+00 | | | 0.00E+00 | | |
| U-233 | (a) | 0.00E+00 | | | 0.00E+00 | | | 0.00E+00 | | |
| U-234 | (a) | 0.00E+00 | | | 0.00E+00 | | | 0.00E+00 | | |
| U-235 | (a) | 0.00E+00 | | | 0.00E+00 | | | 0.00E+00 | | |
| U-236 | (a) | 0.00E+00 | | | 0.00E+00 | | | 0.00E+00 | | |
| U-238 | (a) | 0.00E+00 | | | 0.00E+00 | | | 0.00E+00 | | |
| 200 West Area | | | | | | | | | | |
| C-14 | 2000 | 1.28E+01 | 0.00E+00 | >10000 | 1.56E+01 | 0.00E+00 | >10000 | 1.59E+01 | 0.00E+00 | >10000 |
| Tc-99 | 900 | 1.08E+00 | 8.33E-01 | 2260 | 1.32E+00 | 1.02E+00 | 2260 | 1.33E+00 | 1.02E+00 | 2260 |
| Grouted Tc-99 | 900 | 0.00E+00 | | | 0.00E+00 | 0.00E+00 | | 0.00E+00 | 0.00E+00 | |
| I-129 | 1 | 3.01E-03 | 2.32E-03 | 2260 | 3.67E-03 | 2.83E-03 | 2260 | 3.67E-03 | 2.83E-03 | 2260 |
| Grouted I-129 | 1 | 0.00E+00 | | | 0.00E+00 | 0.00E+00 | | 0.00E+00 | 0.00E+00 | |
| U-233 | (a) | 3.71E-01 | 0.00E+00 | >10000 | 4.52E-01 | 0.00E+00 | >10000 | 4.52E-01 | 0.00E+00 | >10000 |
| U-234 | (a) | 6.13E-01 | 0.00E+00 | >10000 | 7.47E-01 | 0.00E+00 | >10000 | 9.21E-01 | 0.00E+00 | >10000 |
| U-235 | (a) | 1.29E-01 | 0.00E+00 | >10000 | 1.57E-01 | 0.00E+00 | >10000 | 1.68E-01 | 0.00E+00 | >10000 |
| U-236 | (a) | 1.46E-02 | 0.00E+00 | >10000 | 1.78E-02 | 0.00E+00 | >10000 | 1.78E-02 | 0.00E+00 | >10000 |
| U-238 | (a) | 1.47E+00 | 0.00E+00 | >10000 | 1.79E+00 | 0.00E+00 | >10000 | 2.08E+00 | 0.00E+00 | >10000 |

Table G9. (contd)

| Constituent | Benchmark Drinking Water Standard (pCi/L) | Hanford Only Volume | | | Lower Bound Volume | | | Upper Bound Volume | | |
|--------------------------------|---|---------------------|-------------------------------|---------------------------------|--------------------|-------------------------------|---------------------------------|--------------------|-------------------------------|---------------------------------|
| | | Inventory (Ci) | Maximum Concentration (pCi/L) | Approx. Peak Arrival Time (yrs) | Inventory (Ci) | Maximum Concentration (pCi/L) | Approx. Peak Arrival Time (yrs) | Inventory (Ci) | Maximum Concentration (pCi/L) | Approx. Peak Arrival Time (yrs) |
| Projected Cat 3 LLW After 2008 | | | | | | | | | | |
| 200 East Area | | | | | | | | | | |
| C-14 | 2000 | 0.00E+00 | | | 0.00E+00 | | | 0.00E+00 | | |
| Tc-99 | 900 | 0.00E+00 | | | 0.00E+00 | | | 0.00E+00 | | |
| Grouted Tc-99 | 900 | 0.00E+00 | | | 0.00E+00 | | | 0.00E+00 | | |
| I-129 | 1 | 0.00E+00 | | | 0.00E+00 | | | 0.00E+00 | | |
| Grouted I-129 | 1 | 0.00E+00 | | | 0.00E+00 | | | 0.00E+00 | | |
| U-233 | (a) | 0.00E+00 | | | 0.00E+00 | | | 0.00E+00 | | |
| U-234 | (a) | 0.00E+00 | | | 0.00E+00 | | | 0.00E+00 | | |
| U-235 | (a) | 0.00E+00 | | | 0.00E+00 | | | 0.00E+00 | | |
| U-236 | (a) | 0.00E+00 | | | 0.00E+00 | | | 0.00E+00 | | |
| U-238 | (a) | 0.00E+00 | | | 0.00E+00 | | | 0.00E+00 | | |
| 200 West Area | | | | | | | | | | |
| C-14 | 2000 | 4.44E-01 | 0.00E+00 | >10000 | 4.62E-01 | 0.00E+00 | >10000 | 1.45E+02 | 0.00E+00 | >10000 |
| Tc-99 | 900 | 0.00E+00 | | | 0.00E+00 | | | 0.00E+00 | | |
| Grouted Tc-99 | 900 | 3.23E+03 | 2.07E+01 | 1710 | 3.23E+03 | 2.07E+01 | 1710 | 3.23E+03 | 2.07E+01 | 1710 |
| I-129 | 1 | 1.96E-06 | 1.51E-06 | 2260 | 2.04E-06 | 1.57E-06 | 2260 | 2.04E-06 | 1.57E-06 | 2260 |
| Grouted I-129 | 1 | 5.00E+00 | 1.01E-02 | 1710 | 5.00E+00 | 1.01E-02 | 1710 | 5.00E+00 | 1.01E-02 | 1710 |
| U-233 | (a) | 2.98E-01 | 0.00E+00 | >10000 | 3.10E-01 | 0.00E+00 | >10000 | 1.80E-01 | 0.00E+00 | >10000 |
| U-234 | (a) | 3.73E+02 | 0.00E+00 | >10000 | 3.89E+02 | 0.00E+00 | >10000 | 3.11E+02 | 0.00E+00 | >10000 |
| U-235 | (a) | 1.07E+01 | 0.00E+00 | >10000 | 1.11E+01 | 0.00E+00 | >10000 | 1.20E+01 | 0.00E+00 | >10000 |
| U-236 | (a) | 4.82E+01 | 0.00E+00 | >10000 | 5.02E+01 | 0.00E+00 | >10000 | 2.89E+01 | 0.00E+00 | >10000 |
| U-238 | (a) | 5.99E+02 | 0.00E+00 | >10000 | 6.24E+02 | 0.00E+00 | >10000 | 5.04E+02 | 0.00E+00 | >10000 |
| Projected Mixed LLW After 2008 | | | | | | | | | | |
| 200 East Area | | | | | | | | | | |
| C-14 | 2000 | 4.32E+00 | 6.36E-05 | 10000 | 4.33E+00 | 6.38E-05 | 10000 | 5.70E+00 | 8.39E-05 | 10000 |
| Tc-99 | 900 | 8.34E+00 | 9.43E+00 | 1590 | 8.36E+00 | 9.44E+00 | 1590 | 8.27E+00 | 9.34E+00 | 1590 |
| Grouted Tc-99 | 900 | 1.57E+02 | 1.35E+00 | 940 | 1.57E+02 | 1.36E+00 | 940 | 3.34E+02 | 2.89E+00 | 940 |
| I-129 | 1 | 1.04E-01 | 1.17E-01 | 1590 | 1.04E-01 | 1.17E-01 | 1590 | 1.05E-01 | 1.19E-01 | 1590 |
| Grouted I-129 | 1 | 0.00E+00 | | | 0.00E+00 | | | 0.00E+00 | | |
| U-233 | (a) | 1.36E-02 | 2.21E-10 | 10000 | 1.36E-02 | 2.22E-10 | 10000 | 1.38E-02 | 2.25E-10 | 10000 |
| U-234 | (a) | 1.61E+01 | 2.63E-07 | 10000 | 1.61E+01 | 2.63E-07 | 10000 | 3.40E+02 | 5.55E-06 | 10000 |
| U-235 | (a) | 2.56E-01 | 4.18E-09 | 10000 | 2.57E-01 | 4.19E-09 | 10000 | 1.46E+01 | 2.39E-07 | 10000 |
| U-236 | (a) | 3.01E-01 | 4.92E-09 | 10000 | 3.02E-01 | 4.93E-09 | 10000 | 3.05E-01 | 4.98E-09 | 10000 |
| U-238 | (a) | 4.00E+00 | 6.53E-08 | 10000 | 4.01E+00 | 6.54E-08 | 10000 | 3.44E+02 | 5.61E-06 | 10000 |
| 200 West Area | | | | | | | | | | |
| C-14 | 2000 | 0.00E+00 | | | 0.00E+00 | | | 0.00E+00 | | |
| Tc-99 | 900 | 0.00E+00 | | | 0.00E+00 | | | 0.00E+00 | | |
| Grouted Tc-99 | 900 | 0.00E+00 | | | 0.00E+00 | | | 0.00E+00 | | |
| I-129 | 1 | 0.00E+00 | | | 0.00E+00 | | | 0.00E+00 | | |
| Grouted I-129 | 1 | 0.00E+00 | | | 0.00E+00 | | | 0.00E+00 | | |
| U-233 | (a) | 0.00E+00 | | | 0.00E+00 | | | 0.00E+00 | | |
| U-234 | (a) | 0.00E+00 | | | 0.00E+00 | | | 0.00E+00 | | |
| U-235 | (a) | 0.00E+00 | | | 0.00E+00 | | | 0.00E+00 | | |
| U-236 | (a) | 0.00E+00 | | | 0.00E+00 | | | 0.00E+00 | | |
| U-238 | (a) | 0.00E+00 | | | 0.00E+00 | | | 0.00E+00 | | |

Table G9. (contd)

| Constituent | Benchmark Drinking Water Standard (pCi/L) | Hanford Only Volume | | | Lower Bound Volume | | | Upper Bound Volume | | |
|--|---|---------------------|-------------------------------|---------------------------------|--------------------|-------------------------------|---------------------------------|--------------------|-------------------------------|---------------------------------|
| | | Inventory (Ci) | Maximum Concentration (pCi/L) | Approx. Peak Arrival Time (yrs) | Inventory (Ci) | Maximum Concentration (pCi/L) | Approx. Peak Arrival Time (yrs) | Inventory (Ci) | Maximum Concentration (pCi/L) | Approx. Peak Arrival Time (yrs) |
| Projected Melter Waste | | | | | | | | | | |
| 200 East Area | | | | | | | | | | |
| C-14 | 2000 | 0.00E+00 | | | 0.00E+00 | | | 0.00E+00 | | |
| Tc-99 | 900 | 0.00E+00 | | | 0.00E+00 | | | 0.00E+00 | | |
| Grouted Tc-99 | 900 | 3.89E+01 | 3.37E-01 | 0 | 3.89E+01 | 3.37E-01 | 0 | 3.89E+01 | 3.37E-01 | 0 |
| I-129 | 1 | 0.00E+00 | | | 0.00E+00 | | | 0.00E+00 | | |
| Grouted I-129 | 1 | 0.00E+00 | | | 0.00E+00 | | | 0.00E+00 | | |
| U-233 | (a) | 8.49E-01 | 2.16E-05 | 10000 | 8.49E-01 | 2.16E-05 | 10000 | 8.49E-01 | 2.16E-05 | 10000 |
| U-234 | (a) | 4.60E-01 | 1.17E-05 | 10000 | 4.60E-01 | 1.17E-05 | 10000 | 4.60E-01 | 1.17E-05 | 10000 |
| U-235 | (a) | 1.90E-02 | 4.83E-07 | 10000 | 1.90E-02 | 4.83E-07 | 10000 | 1.90E-02 | 4.83E-07 | 10000 |
| U-236 | (a) | 1.70E-02 | 4.32E-07 | 10000 | 1.70E-02 | 4.32E-07 | 10000 | 1.70E-02 | 4.32E-07 | 10000 |
| U-238 | (a) | 4.10E-01 | 1.04E-05 | 10000 | 4.10E-01 | 1.04E-05 | 10000 | 4.10E-01 | 1.04E-05 | 10000 |
| 200 West Area | | | | | | | | | | |
| C-14 | 2000 | 0.00E+00 | | | 0.00E+00 | 0.00E+00 | 0 | 0.00E+00 | | |
| Tc-99 | 900 | 0.00E+00 | | | 0.00E+00 | 0.00E+00 | 0 | 0.00E+00 | | |
| Grouted Tc-99 | 900 | 0.00E+00 | | | 0.00E+00 | 0.00E+00 | 0 | 0.00E+00 | | |
| I-129 | 1 | 0.00E+00 | | | 0.00E+00 | 0.00E+00 | 0 | 0.00E+00 | | |
| Grouted I-129 | 1 | 0.00E+00 | | | 0.00E+00 | 0.00E+00 | 0 | 0.00E+00 | | |
| U-233 | (a) | 0.00E+00 | | | 0.00E+00 | 0.00E+00 | 0 | 0.00E+00 | | |
| U-234 | (a) | 0.00E+00 | | | 0.00E+00 | 0.00E+00 | 0 | 0.00E+00 | | |
| U-235 | (a) | 0.00E+00 | | | 0.00E+00 | 0.00E+00 | 0 | 0.00E+00 | | |
| U-236 | (a) | 0.00E+00 | | | 0.00E+00 | 0.00E+00 | 0 | 0.00E+00 | | |
| U-238 | (a) | 0.00E+00 | | | 0.00E+00 | 0.00E+00 | 0 | 0.00E+00 | | |
| (a) The benchmark groundwater standard for uranium is 30 µg/L expressed as total uranium. To convert isotope specific concentrations from pCi/L to µg/L, use following conversion factors: | | | | | | | | | | |
| • Uranium-233 - 1.05E-04 | | | | | | | | | | |
| • Uranium-234 - 1.62E-04 | | | | | | | | | | |
| • Uranium-235 - 4.66E-01 | | | | | | | | | | |
| • Uranium-236 - 1.58E-02 | | | | | | | | | | |
| • Uranium-238 - 3.00E+00. | | | | | | | | | | |

Table G.10. Predicted Peak River Flux of Key Constituents by Waste and Category at a Line of Analysis to the Columbia River, Alternative A

| Constituent | Hanford Only Volume | | | Lower Bound Volume | | | Upper Bound Volume | | |
|----------------------------|---------------------|----------------------------|---------------------------------|--------------------|----------------------------|---------------------------------|--------------------|----------------------------|---------------------------------|
| | Inventory (Ci) | Maximum River Flux (Ci/yr) | Approx. Peak Arrival Time (yrs) | Inventory (Ci) | Maximum River Flux (Ci/yr) | Approx. Peak Arrival Time (yrs) | Inventory (Ci) | Maximum River Flux (Ci/yr) | Approx. Peak Arrival Time (yrs) |
| 1996-2007 Cat 1 LLW | | | | | | | | | |
| <i>200 East Area</i> | | | | | | | | | |
| C-14 | 0.00E+00 | | | 0.00E+00 | | | 0.00E+00 | | |
| Tc-99 | 0.00E+00 | | | 0.00E+00 | | | 0.00E+00 | | |
| Grouted Tc-99 | 0.00E+00 | | | 0.00E+00 | | | 0.00E+00 | | |
| I-129 | 0.00E+00 | | | 0.00E+00 | | | 0.00E+00 | | |
| Grouted I-129 | 0.00E+00 | | | 0.00E+00 | | | 0.00E+00 | | |
| U-233 | 0.00E+00 | | | 0.00E+00 | | | 0.00E+00 | | |
| U-234 | 0.00E+00 | | | 0.00E+00 | | | 0.00E+00 | | |
| U-235 | 0.00E+00 | | | 0.00E+00 | | | 0.00E+00 | | |
| U-236 | 0.00E+00 | | | 0.00E+00 | | | 0.00E+00 | | |
| U-238 | 0.00E+00 | | | 0.00E+00 | | | 0.00E+00 | | |
| <i>200 West Area</i> | | | | | | | | | |
| C-14 | 3.33E+00 | 0.00E+00 | >10000 | 4.06E+00 | 0.00E+00 | >10000 | 5.21E+00 | 0.00E+00 | >10000 |
| Tc-99 | 3.00E-01 | 2.85E-03 | 2180 | 3.66E-01 | 3.48E-03 | 2180 | 3.99E-01 | 3.79E-03 | 2180 |
| Grouted Tc-99 | 0.00E+00 | | | 0.00E+00 | | | 0.00E+00 | | |
| I-129 | 2.62E-03 | 2.49E-05 | 2180 | 3.20E-03 | 3.04E-05 | 2180 | 3.20E-03 | 3.04E-05 | 2180 |
| Grouted I-129 | 0.00E+00 | | | 0.00E+00 | | | 0.00E+00 | | |
| U-233 | 1.03E-01 | 0.00E+00 | >10000 | 1.25E-01 | 0.00E+00 | >10000 | 1.25E-01 | 0.00E+00 | >10000 |
| U-234 | 1.70E-01 | 0.00E+00 | >10000 | 2.07E-01 | 0.00E+00 | >10000 | 9.01E-01 | 0.00E+00 | >10000 |
| U-235 | 3.56E-02 | 0.00E+00 | >10000 | 4.34E-02 | 0.00E+00 | >10000 | 8.86E-02 | 0.00E+00 | >10000 |
| U-236 | 4.03E-03 | 0.00E+00 | >10000 | 4.92E-03 | 0.00E+00 | >10000 | 4.92E-03 | 0.00E+00 | >10000 |
| U-238 | 4.06E-01 | 0.00E+00 | >10000 | 4.95E-01 | 0.00E+00 | >10000 | 1.66E+00 | 0.00E+00 | >10000 |
| 1996-2007 Cat 3 LLW | | | | | | | | | |
| <i>200 East Area</i> | | | | | | | | | |
| C-14 | 0.00E+00 | | | 0.00E+00 | | | 0.00E+00 | | |
| Tc-99 | 0.00E+00 | | | 0.00E+00 | | | 0.00E+00 | | |
| Grouted Tc-99 | 0.00E+00 | | | 0.00E+00 | | | 0.00E+00 | | |
| I-129 | 0.00E+00 | | | 0.00E+00 | | | 0.00E+00 | | |
| Grouted I-129 | 0.00E+00 | | | 0.00E+00 | | | 0.00E+00 | | |
| U-233 | 0.00E+00 | | | 0.00E+00 | | | 0.00E+00 | | |
| U-234 | 0.00E+00 | | | 0.00E+00 | | | 0.00E+00 | | |
| U-235 | 0.00E+00 | | | 0.00E+00 | | | 0.00E+00 | | |
| U-236 | 0.00E+00 | | | 0.00E+00 | | | 0.00E+00 | | |
| U-238 | 0.00E+00 | | | 0.00E+00 | | | 0.00E+00 | | |
| <i>200 West Area</i> | | | | | | | | | |
| C-14 | 1.48E-01 | 0.00E+00 | >10000 | 1.54E-01 | 0.00E+00 | >10000 | 3.50E-01 | 0.00E+00 | >10000 |
| Tc-99 | 0.00E+00 | | | 0.00E+00 | | | 0.00E+00 | | |
| Grouted Tc-99 | 7.20E+01 | 6.01E-03 | 1840 | 7.20E+01 | 6.01E-03 | 1840 | 7.20E+01 | 6.01E-03 | 1840 |
| I-129 | 3.39E-07 | 3.22E-09 | 2180 | 3.53E-07 | 3.35E-09 | 2180 | 3.53E-07 | 3.35E-09 | 2180 |
| Grouted I-129 | 0.00E+00 | | | 0.00E+00 | | | 0.00E+00 | | |
| U-233 | 9.79E-02 | 0.00E+00 | >10000 | 1.02E-01 | 0.00E+00 | >10000 | 2.32E-01 | 0.00E+00 | >10000 |
| U-234 | 1.24E+02 | 0.00E+00 | >10000 | 1.29E+02 | 0.00E+00 | >10000 | 2.94E+02 | 0.00E+00 | >10000 |
| U-235 | 3.54E+00 | 0.00E+00 | >10000 | 3.69E+00 | 0.00E+00 | >10000 | 8.39E+00 | 0.00E+00 | >10000 |
| U-236 | 1.60E+01 | 0.00E+00 | >10000 | 1.67E+01 | 0.00E+00 | >10000 | 3.80E+01 | 0.00E+00 | >10000 |
| U-238 | 1.99E+02 | 0.00E+00 | >10000 | 2.07E+02 | 0.00E+00 | >10000 | 4.72E+02 | 0.00E+00 | >10000 |

Table G.10. (contd)

| Constituent | Hanford Only Volume | | | Lower Bound Volume | | | Upper Bound Volume | | |
|---------------------------------------|---------------------|-------------------------------------|---|--------------------|-------------------------------------|---|--------------------|-------------------------------------|---|
| | Inventory (Ci) | Maximum River Flux (Ci/yr) | Approx. Peak Arrival Time (yrs) | Inventory (Ci) | Maximum River Flux (Ci/yr) | Approx. Peak Arrival Time (yrs) | Inventory (Ci) | Maximum River Flux (Ci/yr) | Approx. Peak Arrival Time (yrs) |
| 1996-2007 Mixed LLW | | | | | | | | | |
| 200 East Area | | | | | | | | | |
| C-14 | 0.00E+00 | | | 0.00E+00 | | | 1.60E+00 | 6.81E-07 | 10000 |
| Tc-99 | 0.00E+00 | | | 0.00E+00 | | | 1.43E+00 | 1.86E-02 | 1450 |
| Grouted Tc-99 | 0.00E+00 | | | 0.00E+00 | | | 1.23E+02 | 1.01E-02 | 870 |
| I-129 | 0.00E+00 | | | 0.00E+00 | | | 1.68E-02 | 2.18E-04 | 1450 |
| Grouted I-129 | 0.00E+00 | | | 0.00E+00 | | | 0.00E+00 | | |
| U-233 | 0.00E+00 | | | 0.00E+00 | | | 2.22E-03 | 1.05E-08 | 10000 |
| U-234 | 0.00E+00 | | | 0.00E+00 | | | 2.25E+02 | 1.06E-03 | 10000 |
| U-235 | 0.00E+00 | | | 0.00E+00 | | | 9.96E+00 | 4.71E-05 | 10000 |
| U-236 | 0.00E+00 | | | 0.00E+00 | | | 4.86E-02 | 2.30E-07 | 10000 |
| U-238 | 0.00E+00 | | | 0.00E+00 | | | 2.33E+02 | 1.10E-03 | 10000 |
| 200 West Area | | | | | | | | | |
| C-14 | 1.46E+00 | 0.00E+00 | >10000 | 1.46E+00 | 0.00E+00 | >10000 | 1.13E+00 | 0.00E+00 | >10000 |
| Tc-99 | 3.43E+00 | 3.26E-02 | 2180 | 3.44E+00 | 3.27E-02 | 2180 | 2.09E+00 | 1.99E-02 | 2180 |
| Grouted Tc-99 | 4.91E+00 | 4.10E-04 | 1840 | 4.92E+00 | 4.10E-04 | 1840 | 5.96E+01 | 4.97E-03 | 1840 |
| I-129 | 3.50E-02 | 3.33E-04 | 2180 | 3.51E-02 | 3.34E-04 | 2180 | 1.70E-02 | 1.62E-04 | 2180 |
| Grouted I-129 | 0.00E+00 | | | 0.00E+00 | | | 0.00E+00 | | |
| U-233 | 4.59E-03 | 0.00E+00 | >10000 | 4.60E-03 | 0.00E+00 | >10000 | 2.20E-03 | 0.00E+00 | >10000 |
| U-234 | 5.44E+00 | 0.00E+00 | >10000 | 5.45E+00 | 0.00E+00 | >10000 | 1.09E+02 | 0.00E+00 | >10000 |
| U-235 | 8.68E-02 | 0.00E+00 | >10000 | 8.70E-02 | 0.00E+00 | >10000 | 4.78E+00 | 0.00E+00 | >10000 |
| U-236 | 1.02E-01 | 0.00E+00 | >10000 | 1.02E-01 | 0.00E+00 | >10000 | 4.88E-02 | 0.00E+00 | >10000 |
| U-238 | 1.36E+00 | 0.00E+00 | >10000 | 1.36E+00 | 0.00E+00 | >10000 | 1.12E+02 | 0.00E+00 | >10000 |
| Projected Cat 1 LLW After 2008 | | | | | | | | | |
| 200 East Area | | | | | | | | | |
| C-14 | 0.00E+00 | | | 0.00E+00 | | | 0.00E+00 | | |
| Tc-99 | 0.00E+00 | | | 0.00E+00 | | | 0.00E+00 | | |
| Grouted Tc-99 | 0.00E+00 | | | 0.00E+00 | | | 0.00E+00 | | |
| I-129 | 0.00E+00 | | | 0.00E+00 | | | 0.00E+00 | | |
| Grouted I-129 | 0.00E+00 | | | 0.00E+00 | | | 0.00E+00 | | |
| U-233 | 0.00E+00 | | | 0.00E+00 | | | 0.00E+00 | | |
| U-234 | 0.00E+00 | | | 0.00E+00 | | | 0.00E+00 | | |
| U-235 | 0.00E+00 | | | 0.00E+00 | | | 0.00E+00 | | |
| U-236 | 0.00E+00 | | | 0.00E+00 | | | 0.00E+00 | | |
| U-238 | 0.00E+00 | | | 0.00E+00 | | | 0.00E+00 | | |
| 200 West Area | | | | | | | | | |
| C-14 | 1.28E+01 | 0.00E+00 | >10000 | 1.56E+01 | 0.00E+00 | >10000 | 1.59E+01 | 0.00E+00 | >10000 |
| Tc-99 | 1.08E+00 | 1.01E-02 | 2340 | 1.32E+00 | 1.23E-02 | 2340 | 1.33E+00 | 1.24E-02 | 2340 |
| Grouted Tc-99 | 0.00E+00 | | | 0.00E+00 | 0.00E+00 | | 0.00E+00 | 0.00E+00 | |
| I-129 | 3.01E-03 | 2.80E-05 | 2340 | 3.67E-03 | 3.41E-05 | 2340 | 3.67E-03 | 3.41E-05 | 2340 |
| Grouted I-129 | 0.00E+00 | | | 0.00E+00 | 0.00E+00 | | 0.00E+00 | 0.00E+00 | |
| U-233 | 3.71E-01 | 0.00E+00 | >10000 | 4.52E-01 | 0.00E+00 | >10000 | 4.52E-01 | 0.00E+00 | >10000 |
| U-234 | 6.13E-01 | 0.00E+00 | >10000 | 7.47E-01 | 0.00E+00 | >10000 | 9.21E-01 | 0.00E+00 | >10000 |
| U-235 | 1.29E-01 | 0.00E+00 | >10000 | 1.57E-01 | 0.00E+00 | >10000 | 1.68E-01 | 0.00E+00 | >10000 |
| U-236 | 1.46E-02 | 0.00E+00 | >10000 | 1.78E-02 | 0.00E+00 | >10000 | 1.78E-02 | 0.00E+00 | >10000 |
| U-238 | 1.47E+00 | 0.00E+00 | >10000 | 1.79E+00 | 0.00E+00 | >10000 | 2.08E+00 | 0.00E+00 | >10000 |

Table G.10. (contd)

| Constituent | Hanford Only Volume | | | Lower Bound Volume | | | Upper Bound Volume | | |
|---------------------------------------|---------------------|-------------------------------------|---|--------------------|-------------------------------------|---|--------------------|-------------------------------------|---|
| | Inventory (Ci) | Maximum River Flux (Ci/yr) | Approx. Peak Arrival Time (yrs) | Inventory (Ci) | Maximum River Flux (Ci/yr) | Approx. Peak Arrival Time (yrs) | Inventory (Ci) | Maximum River Flux (Ci/yr) | Approx. Peak Arrival Time (yrs) |
| Projected Cat 3 LLW After 2008 | | | | | | | | | |
| 200 East Area | | | | | | | | | |
| C-14 | 0.00E+00 | | | 0.00E+00 | | | 0.00E+00 | | |
| Tc-99 | 0.00E+00 | | | 0.00E+00 | | | 0.00E+00 | | |
| Grouted Tc-99 | 0.00E+00 | | | 0.00E+00 | | | 0.00E+00 | | |
| I-129 | 0.00E+00 | | | 0.00E+00 | | | 0.00E+00 | | |
| Grouted I-129 | 0.00E+00 | | | 0.00E+00 | | | 0.00E+00 | | |
| U-233 | 0.00E+00 | | | 0.00E+00 | | | 0.00E+00 | | |
| U-234 | 0.00E+00 | | | 0.00E+00 | | | 0.00E+00 | | |
| U-235 | 0.00E+00 | | | 0.00E+00 | | | 0.00E+00 | | |
| U-236 | 0.00E+00 | | | 0.00E+00 | | | 0.00E+00 | | |
| U-238 | 0.00E+00 | | | 0.00E+00 | | | 0.00E+00 | | |
| 200 West Area | | | | | | | | | |
| C-14 | 4.44E-01 | 0.00E+00 | >10000 | 4.62E-01 | 0.00E+00 | >10000 | 1.45E+02 | 0.00E+00 | >10000 |
| Tc-99 | 0.00E+00 | | | 0.00E+00 | | | 0.00E+00 | | |
| Grouted Tc-99 | 3.23E+03 | 2.69E-01 | 1840 | 3.23E+03 | 2.69E-01 | 1840 | 3.23E+03 | 2.69E-01 | 1840 |
| I-129 | 1.96E-06 | 1.82E-08 | 2340 | 2.04E-06 | 1.89E-08 | 2340 | 2.04E-06 | 1.89E-08 | 2340 |
| Grouted I-129 | 5.00E+00 | 1.32E-04 | 1840 | 5.00E+00 | 1.32E-04 | 1840 | 5.00E+00 | 1.32E-04 | 1840 |
| U-233 | 2.98E-01 | 0.00E+00 | >10000 | 3.10E-01 | 0.00E+00 | >10000 | 1.80E-01 | 0.00E+00 | >10000 |
| U-234 | 3.73E+02 | 0.00E+00 | >10000 | 3.89E+02 | 0.00E+00 | >10000 | 3.11E+02 | 0.00E+00 | >10000 |
| U-235 | 1.07E+01 | 0.00E+00 | >10000 | 1.11E+01 | 0.00E+00 | >10000 | 1.20E+01 | 0.00E+00 | >10000 |
| U-236 | 4.82E+01 | 0.00E+00 | >10000 | 5.02E+01 | 0.00E+00 | >10000 | 2.89E+01 | 0.00E+00 | >10000 |
| U-238 | 5.99E+02 | 0.00E+00 | >10000 | 6.24E+02 | 0.00E+00 | >10000 | 5.04E+02 | 0.00E+00 | >10000 |
| Projected Mixed LLW After 2008 | | | | | | | | | |
| 200 East Area | | | | | | | | | |
| C-14 | 4.32E+00 | 3.71E-07 | 10000 | 4.33E+00 | 3.72E-07 | 10000 | 5.70E+00 | 4.90E-07 | 10000 |
| Tc-99 | 8.34E+00 | 9.43E-02 | 1630 | 8.36E+00 | 9.45E-02 | 1630 | 8.27E+00 | 9.35E-02 | 1630 |
| Grouted Tc-99 | 1.57E+02 | 1.45E-02 | 970 | 1.57E+02 | 1.45E-02 | 970 | 3.34E+02 | 3.09E-02 | 970 |
| I-129 | 1.04E-01 | 1.17E-03 | 1630 | 1.04E-01 | 1.18E-03 | 1630 | 1.05E-01 | 1.19E-03 | 1630 |
| Grouted I-129 | 0.00E+00 | | | 0.00E+00 | | | 0.00E+00 | | |
| U-233 | 1.36E-02 | 1.30E-12 | 10000 | 1.36E-02 | 1.31E-12 | 10000 | 1.38E-02 | 1.32E-12 | 10000 |
| U-234 | 1.61E+01 | 1.55E-09 | 10000 | 1.61E+01 | 1.55E-09 | 10000 | 3.40E+02 | 3.26E-08 | 10000 |
| U-235 | 2.56E-01 | 2.46E-11 | 10000 | 2.57E-01 | 2.47E-11 | 10000 | 1.46E+01 | 1.41E-09 | 10000 |
| U-236 | 3.01E-01 | 2.89E-11 | 10000 | 3.02E-01 | 2.90E-11 | 10000 | 3.05E-01 | 2.93E-11 | 10000 |
| U-238 | 4.00E+00 | 3.84E-10 | 10000 | 4.01E+00 | 3.85E-10 | 10000 | 3.44E+02 | 3.30E-08 | 10000 |
| 200 West Area | | | | | | | | | |
| C-14 | 0.00E+00 | | | 0.00E+00 | | | 0.00E+00 | | |
| Tc-99 | 0.00E+00 | | | 0.00E+00 | | | 0.00E+00 | | |
| Grouted Tc-99 | 0.00E+00 | | | 0.00E+00 | | | 0.00E+00 | | |
| I-129 | 0.00E+00 | | | 0.00E+00 | | | 0.00E+00 | | |
| Grouted I-129 | 0.00E+00 | | | 0.00E+00 | | | 0.00E+00 | | |
| U-233 | 0.00E+00 | | | 0.00E+00 | | | 0.00E+00 | | |
| U-234 | 0.00E+00 | | | 0.00E+00 | | | 0.00E+00 | | |
| U-235 | 0.00E+00 | | | 0.00E+00 | | | 0.00E+00 | | |
| U-236 | 0.00E+00 | | | 0.00E+00 | | | 0.00E+00 | | |
| U-238 | 0.00E+00 | | | 0.00E+00 | | | 0.00E+00 | | |

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Table G.10. (contd)

| Constituent | Hanford Only Volume | | | Lower Bound Volume | | | Upper Bound Volume | | |
|-------------------------------|---------------------|-------------------------------------|---|--------------------|-------------------------------------|---|--------------------|-------------------------------------|---|
| | Inventory (Ci) | Maximum River Flux (Ci/yr) | Approx. Peak Arrival Time (yrs) | Inventory (Ci) | Maximum River Flux (Ci/yr) | Approx. Peak Arrival Time (yrs) | Inventory (Ci) | Maximum River Flux (Ci/yr) | Approx. Peak Arrival Time (yrs) |
| Projected Melter Waste | | | | | | | | | |
| <i>200 East Area</i> | | | | | | | | | |
| C-14 | 0.00E+00 | | | 0.00E+00 | | | 0.00E+00 | | |
| Tc-99 | 0.00E+00 | | | 0.00E+00 | | | 0.00E+00 | | |
| Grouted Tc-99 | 3.89E+01 | 3.19E-03 | 870 | 3.89E+01 | 3.19E-03 | 870 | 3.89E+01 | 3.19E-03 | 870 |
| I-129 | 0.00E+00 | | | 0.00E+00 | | | 0.00E+00 | | |
| Grouted I-129 | 0.00E+00 | | | 0.00E+00 | | | 0.00E+00 | | |
| U-233 | 8.49E-01 | 2.62E-07 | 10000 | 8.49E-01 | 2.62E-07 | 10000 | 8.49E-01 | 2.62E-07 | 10000 |
| U-234 | 4.60E-01 | 1.42E-07 | 10000 | 4.60E-01 | 1.42E-07 | 10000 | 4.60E-01 | 1.42E-07 | 10000 |
| U-235 | 1.90E-02 | 5.86E-09 | 10000 | 1.90E-02 | 5.86E-09 | 10000 | 1.90E-02 | 5.86E-09 | 10000 |
| U-236 | 1.70E-02 | 5.24E-09 | 10000 | 1.70E-02 | 5.24E-09 | 10000 | 1.70E-02 | 5.24E-09 | 10000 |
| U-238 | 4.10E-01 | 1.26E-07 | 10000 | 4.10E-01 | 1.26E-07 | 10000 | 4.10E-01 | 1.26E-07 | 10000 |
| <i>200 West Area</i> | | | | | | | | | |
| C-14 | 0.00E+00 | | | 0.00E+00 | | | 0.00E+00 | | |
| Tc-99 | 0.00E+00 | | | 0.00E+00 | | | 0.00E+00 | | |
| Grouted Tc-99 | 0.00E+00 | | | 0.00E+00 | | | 0.00E+00 | | |
| I-129 | 0.00E+00 | | | 0.00E+00 | | | 0.00E+00 | | |
| Grouted I-129 | 0.00E+00 | | | 0.00E+00 | | | 0.00E+00 | | |
| U-233 | 0.00E+00 | | | 0.00E+00 | | | 0.00E+00 | | |
| U-234 | 0.00E+00 | | | 0.00E+00 | | | 0.00E+00 | | |
| U-235 | 0.00E+00 | | | 0.00E+00 | | | 0.00E+00 | | |
| U-236 | 0.00E+00 | | | 0.00E+00 | | | 0.00E+00 | | |
| U-238 | 0.00E+00 | | | 0.00E+00 | | | 0.00E+00 | | |

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